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ON FISHER'S PETREL (*ÆSTRELATA FISHERI*).

BY ROBERT RIDGWAY.

Plate IV.

NOTWITHSTANDING more attention has been paid during recent years to the collecting of specimens of the Procellariidæ, no additional information has yet been acquired concerning *Æstrelata fisheri*, described more than twelve years ago from a single specimen obtained in the harbor of Kadiak Island on June 11, 1882, by Mr. Wm. J. Fisher, at that time U. S. Tidal Observer at that station.

With the view to bringing this rare and little known bird prominently to the attention of ornithological collectors, as well as to make its identification more easy, this article and the accompanying colored plate are herewith presented.

Æstrelata fisheri *Ridgway.* FISHER'S PETREL.

Specific characters.—Inner webs of primaries abruptly white for at least the inner half; top of head white, spotted with dusky gray; back uniform bluish gray; inner web of two outer rectrices vermiculated with white and ash gray; under parts largely smoky brown. Wing about 10 inches.

Adult (?) *male*, type of the species, No. 89431, U. S. Nat. Mus., Kadiak Island, Alaska, June, 11, 1882; William J. Fisher.— Head, neck, and lower parts pure white, but this unvaried only on sides of forehead, lores, malar region, chin, throat, chest and under tail-coverts; feathers of middle of forehead (longitudinally) and fore part of crown, marked with a central spot of slate-color, the feathers of the hinder part of crown and occiput similarly marked but the spots becoming gradually more transverse posteriorly, and, at the same time, the lighter borders of the feathers more grayish; a blackish spot immediately before and beneath the eye; sides of breast washed with grayish, and belly and flanks overlaid by a nearly uniform wash of deep smoky gray, all the feathers being pure snow-white immediately beneath the surface; many of the feathers of the sides barred with plumbeous gray; anterior under wing-coverts dark sooty gray or slate-color, the coverts along the outer margin of the under side of the wing mainly of the same color; rest of wing-lining, with inner webs of primaries, uniform pure white, the quills having merely a narrow, but abruptly defined, dusky stripe next the shaft, the white portion being margined for a short distance along the terminal portion with grayish; axillars mainly plumbeous, or barred with the same. Hind neck, back, scapulars, rump, and upper tail-coverts plumbeous, darkest on the lower part of the rump, the feathers with distinct dusky shaft-streaks, except on the hind neck. Tail white with very irregular zigzag bars of plumbeous gray, the innermost rectrices mainly gray (the middle pair, however, are wanting). Lesser wing-coverts dark slate (many shades darker than the back); greater coverts, secondaries, and tertials plumbeous gray, more silvery toward edge of wing, very distinctly edged with pure white; three outer primaries and primary coverts slate black, the inner quills gradually more grayish, and narrowly bordered with white. Bill wholly deep black; tarsi, most of basal phalanx of inner toe, and basal portion of webs, light brownish (flesh-color in life?), rest of feet dusky. Wing, 10.15 inches; tail, 4.00, slightly graduated; culmen, 1.00; depth of bill at base, .40, width at base, .40; tarsus, 1.35; middle toe, 1.40.

Fisher's Petrel appears to be very distinct from any other known species, its nearest relatives, apparently, being Peale's Petrel, *Æ. gularis* (PEALE),[1] and De Filippi's Petrel, *Æ. defilip-*

[1] *Procellaria gularis* PEALE, Zool. U. S. Expl. Exp. 1848, 299 (Antarctic Ocean; U. S. Nat. Mus.).

Œstrelata gularis BREWSTER, Bull. Nutt. Orn. Club, IV, 1881, 94 (part).— BAIRD, BREWER, & RIDGWAY, Water B. N. Am. II, 1884, 397 (part).

Æstrelata gularis RIDGWAY, Man. N. Am. B. 1887, 67.

Æstrelata mollis (nec *Procellaria mollis* GOULD) COUES, Proc. Ac. Nat. Sci. Philad. 1866, 150, 151 (part).

piana GIGLIOLI and SALVADORI.[1] The former agrees with *Æ. fisheri* only in the pattern of coloration of the inner web of the primaries, being otherwise very distinct in plumage and having the bill much stouter, the tarsi and toes decidedly shorter, and the wing also shorter. *Æ. defilippiana*, although bearing a slight superficial resemblance in general coloration, is even more distinct, as the following comparative diagnoses, drawn up from the type of *Æ. fisheri* and two examples of *Æ. defilippiana*, one in the American Museum of Natural History, New York City, the other in the collection of Canon Tristram, will show: —

COMPARATIVE CHARACTERS OF *Æstrelata fisheri* AND *Æ. defilippiana.*

Æ. fisheri.— Lower parts chiefly smoky grayish brown on the surface, this color nearly uniform on belly and flanks; greater wing-coverts, secondaries and tertials silvery gray, broadly edged with pure white, the lesser coverts uniform dusky in strong contrast; rectrices (except middle pair) white, transversely vermiculated on both webs with ash gray; top of head white, spotted with dusky; feet, including webs, dusky, except basal portion of inner web and toe. Wing, 10.15; tail, 4.00 (graduated for .90 of an inch); culmen, 1.00; tarsus, 1.35; middle toe with claw, 1.70.

Æ. defilippiana.— Lower parts entirely pure white, except on sides of breast, which are ash gray, like the nape. Outer surface of wings uniform dusky; rectrices uniform ash gray, except two outer pairs, which have inner webs white (the second finely sprinkled with gray towards end), the outer webs finely mottled gray; feet, including webs, pale-colored (fleshy in life), except outer side of outer toe, which is dusky. Wing, 8.70–9.00; tail, 3.80–4.25 (graduated for .90–1.00 inch); culmen, 1.04–1.10; tarsus, 1.07–1.20; middle toe with claw, 1.37–1.40.

The two species are, in fact, very distinct. *Æ. defilippiana* is decidedly less in general size, although the bill is absolutely larger than in *Æ. fisheri.* The lower parts are entirely white,

[1] *Æstrelata defilippiana* GIGLIOLI & SALVADORI, Ibis, V, n. s. Jan. 1869, 63 (off coast of Peru, lat. 18° 4′ S., long. 79° 35′ W.); Atti Soc. Ital. Nat. XI, 1869, 453.— GIGLIOLI, Fauna Vertebr. nell' Oceano, 1870, 43.— RIDGWAY, Man. N. Am. B. 1887, 68.

Œstrelata defilippiana SALVIN, Rowley's Orn. Misc. I, pt. iv, May, 1876, 255, pl. 33.— RIDGWAY, Proc. U. S. Nat. Mus. VI, 1886, 657, 658, in text; VIII, 1885, 17, 18.

except on the sides of the breast, where there is an encroachment of the pure ash gray of the nape. The top of the head is quite uniform gray, except anteriorly, where the feathers are bordered with white, producing a distinct squamation. The wings are entirely concolor on their outer surface, and the inner web of the outer tail-feather is wholly pure white.

The synonymy of *Æ. fisheri* is as follows:—

Æstrelata fisheri RIDGWAY, Proc. U. S. Nat. Mus. V, June 26, 1883, 656 (Kadiak, Alaska; U. S. Nat. Mus.); VIII, 1885, 17, 18 (comparison with *Æ. defilippiana*).— BAIRD, BREWER, & RIDGWAY, Water B. N. Am. II, 1884, 396.— COUES, Key, 2d ed. 1884, 780.

Æstrelata fisheri AMERICAN ORNITHOLOGISTS' UNION, Check-List, 1886, No. 100.— RIDGWAY, Man. N. Am. B. 1887, 68.

? ? *Fregetta grallaria* (nec *Procellaria grallaria* VIEILLOT) NELSON, Cruise Corwin in 1881 (1883), 113 (Aleutian Islands southward).

GÄTKE'S HELIGOLAND.[1]

BY ELLIOTT COUES.

There is no Heligoland but Heligoland, and Gätke is its prophet. The name means "holy land," and this island in the North Sea is a sort of Mecca to which all good birds must make their pilgrimage or perish in the attempt. Heligoland may more literally be called the magnetic pole of the bird-world, so irresistibly does it seem to attract birds to deviate from ordinary Zugstrassen (flight-lines) — either in isolated wanderings from Asia, Africa or America, or in vast mass-migrations that overshadow the land like clouds crossing the skies. Heligoland is the most peculiarly favored, longest

[1] Heligoland | as an | Ornithological Observatory | the Result of Fifty Years' Experience | by Heinrich Gätke | [etc., 5 lines] | translated by | Rudolph Rosenstock, M. A. Oxon. | [Vignette and motto] | Edinburgh: David Douglas, 10 Castle Street | 1895 | 1 vol., roy. 8vo. pp. xii, 599, 2 portraits of author and various figs. in text.

established and successfully operated ornithological observatory in the world. Gätke's figure is unique in our annals; not one of us can remember a time when he has not stood alone for all we know of the subject to which his life has been devoted, like a veritable Pharos, throwing a steady light upon the dense darkness of our ignorance. The veteran is now in his eighty-third year; he has kept ceaseless watch for half a century; and this volume gives the ripe fruit of his long vigilance, without a sign of failing powers, with the enthusiasm of youth unabated, with scrupulous fidelity to facts, and with scientific precision of statement. It is one of the most original, most remarkable, and most valuable books ever written about birds. I am sure no reader of 'The Auk' can fail to be interested, if I succeed in reflecting upon these pages anything like an adequate representation of Gätke's results.

About one-fourth of the work is devoted to a treatise upon migration in general, as viewed from the Heligoland standpoint, and this is followed by one chapter on color-changes without moult, or what I have called aptosochromatism. The main body of the work is occupied with the systematic consideration of the 397 or 398 species which occur or have occurred on this island, the whole record being given in minute detail. I will revert to the first-mentioned matters in the sequel, when we shall find that some of Gätke's results are nothing short of astounding. But first, let us proceed to some analysis of this extraordinary local list.

To appreciate the situation, we must know that Heligoland is a little island in the German Ocean, due east of the mouth of the Humber in England. It is a mere islet, in fact — a sea-girt red rock of triangular shape, with a flat top and steep sides, practically inaccessible except at one end, where there is a low sand-spit and a broken escarpment; the total length is 5,700 feet, or little over a mile. The rock is bare except for the green turf — so bare that the "throstle bushes," or contrivances made of brush and network to catch thrushes, are among the conspicuous features of the surface. There is a little town, whose buildings are mainly at one corner of the island, and a lighthouse. Such is the scene of Gätke's lifelong labors, to which billions of birds fly regularly; and among them his watchful eye has found astrays from every quarter of the globe.

The first thing that strikes us, on ciphering out the extraordinary list, is the preponderance of land-birds over water-birds which visit the sea-girt rock. The figures are 248 of the former to 150 of the latter, or almost precisely as 3 : 2—that is to say, three-fifths of the population are land-birds, and two-fifths are waders and swimmers. Such a proportion, for such a place, is altogether exceptional; we should expect only a fair sprinkling of land-birds in an avifauna mainly represented by aquatic species.

Another curious thing is, that Heligoland is the home of hardly any birds. The natives cut no figure whatever in the society of this very select spot— no more than New York's 'Four Hundred' do in the real life of that metropolis. Thus Gätke says (p. 577): "Of the nearly 400 species of birds comprised in the avifauna of Heligoland only three species regularly, year after year, have made their breeding home upon this island rock, these being the Guillemots,[1] a few pairs of the Razorbill, and about twenty pairs of Sparrows; but these have been joined within the last few years by a few pairs of Starlings and House Martins." Nevertheless, there are a few others which have been known to breed occasionally, or which formerly did so and do not now. Considering these, I make out the following list: —

1. **Sturnus vulgaris**. Properly a migrant, in profusion, with migrations peculiar in several respects; but a few pairs have bred, as above said.

2. **Hypolais icterina**. Migrant, formerly common, now rare; a pair bred, summer of 1876.

3. **Saxicola œnanthe**. Properly a migrant, common; but has (probably) bred occasionally.

4. **Motacilla alba**. Migrant, but mainly a summer bird which breeds occasionally or tries to do so.

5. **Motacilla rayi**. Migrant, early and regular, not common; known to have bred twice.

6. **Anthus arboreus**. Migrant, May and August, September, common; nested once, but the eggs were destroyed.

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[1] *Uria troile* and *U. ringvia*. In Gätke's list these count as two species, Nos. 384 and 385. His total numeration is ostensibly 396; to which add No. 248*a*, *Otis tarda*, given in preface but not numbered, and No. 254*a*, *Platalea leucorodia*, interpolated in the list, making in all 398—or 397 without counting *U. ringvia*.

7. **Alauda arvensis.** Almost resident; only common in migration; breeds occasionally.

8. **Fringilla cœlebs.** Migrant, chiefly April and September, October; breeds now and then.

9. **Acanthis rufescens.** Occasional. A pair bred in 1872.

10. **Passer domesticus.** The only land-bird which is a resident and regular breeder.

11. **Chelidon urbica.** Common, chiefly in migration; a small colony breeding.

12. **Hæmatopus ostralegus.** Common; chiefly in migration, but seen at any season; has bred occasionally.

13. **Larus argentatus.** Commonest Gull at any season; formerly bred, when protected—up to about 80 years ago.

14. **Uria troile** (and **ringvia**). Regular breeder; now about 2,000 birds, formerly more; protected by law to July 25.

15. **Alca torda.** A few, regularly breeding with the Murres.

16. **Fratercula arctica.** A few, usually seen among the Murres; formerly bred.

This finishes the few species ever known to be native to Heligoland; and most of these are only fortuitous in this relation, their real character being that of migrants, thus requiring to be reconsidered in another connection.[1]

Proceeding now to further analysis of the list, we at once encounter a difficulty; for Gätke's birds are often non-conformists, which do not fit well in the several categories we are accustomed to. When we speak of summer visitants, we generally mean breeders, which few of Gätke's are. Many of his winter visitants are genuine migrants of that season. Various other vagaries, or what seem so to us, develop as we scan the record. I will venture, however, upon a second list which shall include species that are neither breeders, nor regular spring and fall migrants only, nor yet belong to the astonishing array of mere astrays. It would be a short one, were it not for Sea-ducks and Sea-gulls:—

[1] Herr Gätke is an ornithologist of the old school which includes such honored names as those of Blasius and Naumann in Germany, and too well founded in the faith of byegone days to yield to innovations in classification and nomenclature upon which some of us boys plume ourselves. In the above list, and others to follow, I use in the main the modern names which his translator, Rosenstock, supplies in footnotes, unless I know some other name which seems to suit our code better. The present occasion is not one of canonical scrupulosity in terminology—it is simply ornithological.

1. **Haliæetus albicilla.** Irregular winter visitant; mostly young birds; one adult taken Feb. 3, 1875; another one seen.

2. **Pandion haliaëtus.** Regular summer visitant, chiefly April to Sept., but no breeding record.

3. **Buteo buteo.** Common at any season, except in June and July.

4. **Archibuteo lagopus.** Resident, *i. e.*, may occur at any season — not that any one individual necessarily stays the year around; common in migration; casual in winter; not a breeder.

5. **Troglodytes parvulus** (*Anorthura troglodytes*). Resident, except in summer; no breeding record.

6. **Anthus rupestris** (*obscurus*). Common all the year, except in summer.

7. **Emberiza citrinella.** Resident in varying numbers; no breeding record; common in migration.

8. **Plectrophenax nivalis.** Chiefly and most properly winter visitant, but some as early as Aug. and Sept.; later abundant; 3 specimens in full dress.

9. **Acanthis cannabina.** Chiefly migrant, but winters; common during most of the year — Aug. to Apr.

10. **Acanthis flavirostris** (*montium*). Chiefly migrant, but common Oct. to Apr.

11. **Acanthis linaria.** (Mealy Redpoll of the European writers.) Irregular winter visitant, sometimes in innumerable multitudes in the fall; always rare in spring.

12. **Chloris chloris.** Great numbers migrating through winter of 1884–5; some seen till end of May.

13. **Gallinago gallinago.** Common, and only absent in June and July; great flights sometimes in winter.

14. **Tringa maritima.** Mainly and properly winter visitant; some in Aug., Sept., and in spring.

15. **Calidris arenaria.** Mainly winter visitant; common from end of July; only stragglers in May.

16. **Cygnus musicus.** Flights of 10, 20 or more migrating every winter.

17. **Bernicla brenta.** Flights every winter, like those of the Swans.

18. **Mareca penelope.** Fairly frequent in winter.

19. **Tadorna cornuta.** Rare; mostly young birds in Aug., Sept.; some old ones in winter.

20. **Oidemia nigra.** Myriads in winter on the sea.

21. **Oidemia fusca.** Myriads in winter on the sea.

22. **Aythya marila.** Very common, especially in severe winters.

23. **Aythya cristata.** Rare, in severe winters.

24. **Aythya ferina.** Rare, in severe winters.

25. **Glaucionetta clangula.** Common, especially in severe winters; mostly females and young males.

26. **Clangula hyemalis.** Common, especially in severe winters; earliest Duck to arrive.

27. **Somateria mollissima.** Common in autumn and winter, irrespective of the weather.

28. **Mergus merganser.** Common in severe winters, rare in mild ones.

29. **Mergus serrator.** Very common in severe winters.

30. **Mergellus albellus.** Rare, in winter — hardly more than a straggler.

31. **Phalacrocorax carbo.** Rare and irregular, in winter; only one ever taken in full dress.

32. **Phalacrocorax graculus.** Like the last, but rarer.

33. **Sula bassana.** Occasional at any season, except Jan. and Feb. of hard winters; but no breeding record.

34. **Rissa tridactyla.** Commonest Gull, from Oct. to Feb.; much killed for food and ornament.

35. **Larus glaucus.** Frequent, in late fall and winter; never seen in full dress.

36. **Larus leucopterus.** Rare in winter — hardly to be seen every winter.

37. **Larus marinus.** Common, in autumn and winter, but extremely rare in full dress.

38. **Larus fuscus.** Not common; chiefly young birds in Sept.

39. **Larus canus.** Common in winter.

40. **Larus ridibundus.** Rare, especially old birds; young ones in sporadic flocks.

41. **Larus minutus.** Common in migration, from Sept. onward, but many also winter. Only twice taken in full dress (once Nov. 15, 1861).

42. **Fulmarus glacialis.** Irregular, mostly isolated cases; sometimes common in Nov. and Dec.

43. **Procellaria pelagica.** Taken almost every winter, but hardly regular; 8 or 10 in Nov., Dec. 1879.

44. **Urinator immer,** better known as *Colymbus torquatus.* Common in late fall and winter; rarely seen in full dress.

45. **Urinator arcticus.** Frequent in winter; only one specimen ever taken in full dress.

46. **Urinator lumme.** Commonest Diver in winter; immense flights occasionally.

47. **Cepphus grylle.** Common, in Aug., fall, and winter; rarely seen in full dress.

48. **Alle alle.** Common late in autumn and in winter.

49. **Colymbus griseigena.** Frequent in fall, rare in winter, no bird in full dress seen for 20 years.

50. **Colymbus auritus** (*cornutus* Auct.). Common in fall and winter.

This list of 50 species includes a few "irregulars," and a few others which are "resident" after a fashion; for the rest it is the list of regular winterers of Heligoland. In this category, the land-list is only about one-fifth; and if we except roving flocks of some of these species, the numbers of individuals bear no calcu-

lable proportion to those of the water-birds. Of the latter, the main body is composed of marine Anatidæ and Laridæ. The implication of "severe" winters is, when the Baltic and other waters, which would ordinarily have their quota of sea-birds, are frozen up to an extent which drives hordes of such birds elsewhere.

Elimination of the foregoing 16 + 50 = 66 species leaves us the main bulk of the Heligoland list to be considered under the two categories of (1) regular migrants and (2) accidental visitants. Singular as it may seem, the latter are largely in excess of the former. Though it be quite true that a hard and fast line cannot be drawn in every case between these two categories, yet it is easy to separate them in most instances. The number of species which seem to have no business in Heligoland, or which ought to have business there but seldom attend to it, is the phenomenal result of Gätke's career as an ornithological detective. I find that a round 200 birds — one-half of the entire ornis, and one or two more for good measure — have been found in Heligoland in violation of law and order. If this shocks our conventional ideas of propriety, there is still worse to be said, and we will let the veteran say it at once. He is speaking of meteorological conditions which had yielded him a batch of rarities, and continues (p. 331): "I myself feel convinced that such material as comes under our observation forms only a small fraction of what is really abroad under these conditions; indeed I have frequently expressed myself as ready to exchange the whole of my collection, wonderful as it is, for all the birds which have occurred here without having been seen or killed, if that were possible; the only reservation which I would make in this exchange being the splendid example of *Larus rossii*, of which I am the fortunate owner." To feel the full force of these words, we must remember that his collection is the result of 50 years' work, and represents *almost* every capture ever made on the island. We will proceed with the list, which I will annotate in the briefest possible terms, according to Gätke's indications; and it will be convenient to set in double column with it the corresponding list of the regular migrants, similarly annotated, for comparison of related species as far as possible. I follow the same sequence in which Gätke treats the species: —

MIGRANTS.

1. **Falco gyrfalco.** Every fall, Oct. and Nov.; 6 or 8 specimens in all.

2. **Falco peregrinus.** Spring and fall, regular, not common.

3. **Falco subbuteo.** Spring and fall, regular, common.

4. **Falco æsalon.** Spring and fall, regular, commonest Hawk.

5. **Falco tinnunculus.** Spring and fall, regular, common; casual at other seasons.

6. **Pernis apivorus.** Regularly; very common in May, and in Aug. and Sept.

7. **Accipiter nisus.** Common, chiefly Aug. to Nov.

8. **Circus æruginosus.**
9. **Circus cyaneus.**
10. **Circus cineraceus.**

} Rare or casual—hardly more than stragglers.

STRAGGLERS.

1. **Falco candicans.** Specimen Oct., 1843; seen, Sept. 19, 1843, and in two or three other cases.

2. **Falco sacer.** One specimen, 1839 or 1840.

3. **Falco feldeggi.** One specimen, summer of 1840.

4. **Falco eleonoræ.** One seen, May 26, 1879.

5. **Falco cenchris.** Three cases; two specimens, one in summer of 1839 or 1840.

6. **Falco vespertinus.** Six cases, five specimens, 1840 to 1887, mostly May and June.

7. **Aquila chrysaëtos.** Four cases in 40 years; one taken Nov. 18, 1867.

8. **Aquila pomarina.** Two cases; one taken in 1838.

9. **Circaëtos gallicus.** Two cases; one taken in 1835.

10. **Accipiter palumbarius.** Four or five cases in 50 years; two taken, one of them Mar. 8, 1880.

11. **Milvus ictinus.** Once or twice a year; 3 specimens in 50 years.

12. **Milvus ater.** One specimen, many years ago.

13. **Circus swainsoni.** One visitation of seven individuals (?); one specimen, Aug. 12, 1858.

14. **Strix flammea.** Casual; 10 or 11 individuals in Oct. 1876.

15. **Syrnium aluco.** One specimen.

16. **Athene noctua.** One specimen, many years ago.

17. **Nyctala tengmalmi.** About 30 cases in 50 years.

18. **Megascops giu.** One specimen, May 16, 1862.

MIGRANTS.

11. **Asio otus.** Spring and fall, not rare.

12. **Asio accipitrinus.** Spring and fall; the commonest Owl by far.

13. **Corvus corone.** Rare and exceptional, among countless flocks of *C. cornix.*

14. **Corvus cornix.**
15. **Corvus frugilegus.**
16. **Corvus monedula.**

} In profusion in migration; astonishing flights, many thousands a day in spring and fall.

17. **Garrulus glandarius.** Millions sometimes in fall; some years none.

18. **Lanius excubitor.** Rare and isolated cases, in spring and fall.

19. **Lanius** "**borealis** Vieill." (*major* Pall.) More frequent than the last, under same circumstances.

20. **Muscicapa atricapilla.** Commonest Flycatcher, especially in fall.

21. **Muscicapa grisola.** Common, especially in May, June and July; no breeding record.

22. **Muscicapa parva.** Formerly common, in fall; rare 1875 to 1880; none seen since.

STRAGGLERS.

19. **Nyctea nyctea.** One specimen, fall of 1839 or 1840; probably one other seen.

20. **Surnia ulula.** One specimen, in the '30's; two seen afterward.

21. **Corvus corax.** One specimen, fall of 1841; two seen afterward.

22. **Pica pica.** Two cases; one specimen, Nov. 11, 1876.

23. **Nucifraga caryocatactes.** Three specimens, Aug. 1844, Oct. 17, 1853, and one later.

24. **Perisoreus infaustus.** Once seen, Apr. 14, 1849.

25. **Pyrrhocorax alpinus.** One specimen, long ago; one seen, Sept. 14, 1868, and two afterward.

26. **Pyrrhocorax graculus.** Two cases, May 1871 or '72, and Mar. 28, 1877.

27. **Lanius meridionalis** (Temm.). One specimen thus identified.

28. **Lanius minor.** Isolated cases of late years, formerly less rare, in spring.

29. **Lanius rufus.** Five specimens in 40 years, May and June.

30. **Lanius collaris.** Isolated cases of late years, formerly less rare, Apr. and May.

31. **Lanius isabellinus.** One specimen, Oct. 25, 1854.

32. **Muscicapa collaris.** One specimen, June 3, 1860.

33. **Ampelis garrulus.** Sporadic; small flights in Sept. 1847 and Jan. 1850; most years none.

MIGRANTS.

23. **Pastor roseus**. About 40 cases in 50 years, chiefly in June.

24. **Turdus viscivorus**. Rare, but regular; perhaps 20 a year could be taken.

25. **Turdus musicus**. Commonest Thrush; 100 to 1,000 taken some days.

26. **Turdus iliacus**. Common; fall migration extends into winter.

27. **Turdus pilaris**. Common.

28. **Merula merula**. Very common; migrates early in spring, late in fall.

29. **Merula torquata**. Common; migrates late in spring, early in fall.

30. **Daulias luscinia**. Regular, Apr. and May; rarely if ever seen in fall; song never heard.

31. **Cyanecula suecica**. Common; sometimes 30 to 60 specimens a day, in May.

32. **Cyanecula leucocyanea**. Rare; 8 or 10 shot in 50 years; a flight in Apr. 1877.

STRAGGLERS.

34. **Oriolus galbula**. One specimen in 50 years.

35. **Turdus varius** (Pall.). Shot 13 times, 1827 to 1884, chiefly in Oct.; seen 6 or 8 other times.

36. **Turdus dauma**. One specimen, about 1836.

37. **Turdus obscurus** Gm. (*pallens* Pall.). One seen, not taken, June 3, 1881.

38. **Turdus swainsoni**. One specimen, Oct. 2, 1869.

39. **Turdus pallasi** (Cab.). One specimen, Oct. 1836

40. **Turdus fuscescens**. One specimen, about 1833.

41. **Turdus fuscatus** (Pall.). One specimen, Oct. 10, 1880.

42. **Turdus ruficollis** (Pall.). One specimen, Oct. 1836.

43. **Turdus atrigularis** (Temm.). One seen near the Island in May.

44. **Merula migratoria**. One specimen, Oct 14, 1894.

45. **Monticola saxatilis**. Three specimens, May 9, 1851, May 17, 1860, Nov. 12, 1874; a few others seen.

46. **Monticola cyanus**. One specimen, about 1830–32.

47. **Galeoscoptes carolinensis**. One specimen, Oct. 28, 1840.

48. **Harporhynchus rufus**. One specimen, fall of 1836.

49. **Pycnonotus xanthopygus**. One specimen, May, 1837.

50. **Daulias philomela**. One specimen, caught at light-house, night of May 4–5.

51. **Aëdon familiaris**. One specimen, in the 30's; two other supposed cases.

52. **Cyanecula wolfi**. One specimen, Mar. 30, 1848; 3 other cases.

MIGRANTS.

33. **Erithacus rubecula.** Very common in early spring and late fall migrations; sometimes winters.

34. **Ruticilla phœnicurus.** Very common in late spring and early fall migration.

35. **Ruticilla tithys.** Common in early spring and late fall migration, sometimes to Dec.

36. **Sylvia cinerea.** Common, Apr., May, and Aug., Sept.

37. **Sylvia curruca.** Regular, not common, Apr., May, and Sept., Oct.

38. **Sylvia hortensis.** Common, Apr., May, and Aug., Sept.

39. **Sylvia atricapilla.** Regular, not common, Apr., May, and Oct., Nov., even Dec.

40. **Sylvia nisoria.** Rare, and hardly regular; chiefly in May.

41. **Phylloscopus sibilatrix.** Rare, hardly regular, in May, July, and Aug.

42. **Phylloscopus trochilus.** Commonest Warbler, especially in May, and Aug., Sept.

43. **Phylloscopus rufus.** Next commonest Warbler; earliest spring and latest fall migrant of the genus.

STRAGGLERS.

53. **Ruticilla mesoleuca.** One specimen, June 12, 1864.

54. **Ruticilla moussieri.** One specimen, summer of 1842.

55. **Sylvia orphea.** One specimen, July 8, 1876; two other cases reported many years ago.

56. **Sylvia melanocephala** (Gm.). One specimen, many years ago.

57. **Melizophilus undatus.** One specimen, no date; also one seen, May 31, 1851.

58. **Phylloscopus bonellii.** Two specimens, Oct. 8, 1861, and Oct. 9, 1874.

59. **Phylloscopus tristis** (Blyth). One specimen, Oct. 1846; a few others seen.

60. **Lusciniola fuscata** (Blyth). One specimen, Oct. 24, 1876.

61. **Phylloscopus superciliosus.** Over 80 seen and 32 or 33 taken from 1846 to 1886, all but two in the fall.

62. **Phylloscopus proregulus.** Specimen taken Oct. 6, 1845; one seen Oct. 29, 1875.

63. **Phylloscopus coronatus.** One specimen, Oct. 4, 1843.

64. **Phylloscopus borealis.** Specimen taken, Oct. 6, 1854; one seen, June 1, 1859.

65. **Phylloscopus viridanus.** Three specimens, Sept. 25, 1878, May 30, 1879, June 3, 1880.

66. **Phylloscopus nitidus.** One specimen, Oct. 11, 1867.

67. **Hypolais polyglotta.** One specimen, May 23, 1846.

MIGRANTS.

44. **Acrocephalus streperus.** Formerly almost regular, now rare, little more than a straggler.

45. **Acrocephalus palustris.** Rare, but regular; formerly less rare; very early fall migration.

46. **Acrocephalus phragmitis.** Common, Mar. to May, and Aug. to Oct.

47. **Acrocephalus aquaticus.** Rare, hardly every year; common in 1855 and 1856.

48. **Locustella nævia.** Rare, and irregular; oftenest in May and Aug.

49. **Regulus cristatus.** Common, some years in profusion, Mar., Apr. and Sept.–Nov.

50. **Regulus ignicapillus.** Regular, not common; earlier in spring, later in fall than the last.

51. **Accentor modularis.** Regular, common.

52. **Pratincola rubetra.** Common, regular migrant, in May, and Aug., Sept., perhaps in summer.

53. **Pratincola rubicola.** Less common but regular migrant, from end of Feb., and again in the fall.

STRAGGLERS.

68. **Hypolais olivetorum.** One specimen, in 1860.

69. **Hypolais pallida.** One specimen, Sept. 20, 1883.

70. **Hypolais caligata.** One specimen, Sept. 28, 1851.

71. **Acrocephalus turdoides.** One specimen, about 50 years ago.

72. **Acrocephalus agricola.** One specimen, June 12, 1864.

73. **Locustella certhiola.** One specimen taken at light-house, Aug. 12 of 1858 or an earlier year.

74. **Locustella fluviatilis.** One seen May 9, 1854.

75. **Dendroica virens.** One specimen, Nov. 19, 1858.

76. **Accentor alpinus.** Three specimens, May 1852, May 1870, and Oct. 1862; others seen.

77. **Cinclus melanogaster.** Five specimens.

78. **Cinclus pallasi.** Seen, 1847 and later.

79. **Saxicola albicollis** (*aurita* Temm.). Two specimens, Oct. 26, 1851, May 12, 1860.

80. **Saxicola stapazina.** One specimen, about 1840.

81. **Saxicola deserti.** Three specimens, Oct. 4, 1856, Oct. 26, 1857, June 23, 1880.

82. **Saxicola capistrata** (*morio* Ehr.). Two specimens, May 9, 1867, June 6, 1882.

83. **Saxicola leucura.** One seen Aug. 11, 1880.

MIGRANTS.

54. **Motacilla lugubris** (*yarrelli*). Earliest migrant, in Feb. and Mar.; seldom seen in the fall.

55. **Motacilla flava**. Regular, and common, especially in the fall.

56. **Motacilla melanocephala**. Regular, and probably common.

57. **Anthus pratensis**. Common, chiefly migrant, Feb. to May, and Aug. to Nov.; a few may winter.

58. **Anthus cervinus**. Rare, irregular, chiefly noticed in Sept., especially of 1884.

59. **Anthus campestris**. Rare, irregular, in May and Aug.

60. **Anthus richardi**. Common, especially in Sept. and Oct. of certain years.

61. **Alauda arborea**. Irregularly common, chiefly in Feb., Mar., and Oct., Nov.

62. **Calandrella brachydactyla**. Rare, hardly more than a straggler; about 60 cases in 50 years, in May, June, and Sept. to Nov. inclusive.

63. **Otocoris alpestris**. In steadily increasing profusion since 1847.

64. **Emberiza miliaria**. Irregular, usually rare, in Mar. and Nov.; common Nov. 1883.

65. **Emberiza hortulana**. Commonest Bunting, in May, and in Aug., Sept.

66. **Emberiza schœniclus**. Usually rare; common in fall of 1884.

STRAGGLERS.

84. **Motacilla melanope** (*sulphurea*). About once in 5 years, in first half of Mar.

85. **Motacilla citreola**. Five cases in 40 years, all in early fall plumage.

86. **Anthus aquaticus**. Two cases; one taken.

87. **Anthus pensilvanicus**. Two specimens, Nov. 6, 1851, and May 17, 1858.

88. **Calandrella pispoletta**. One specimen, May 26, 1879.

89. **Melanocorypha calandra**. One specimen, early in June of 1839 or 1840.

90. **Melanocorypha sibirica**. Two specimens, Aug. 2, 1861, June 2, 1886.

91. **Melanocorypha yeltoniensis**. Two specimens, Apr. 27, 1874, July 27, 1892.

92. **Galerita cristata**. Scarcely one every three or four years.

93. **Emberiza aureola**. Three specimens, Sept. 18, 1852, Nov. 5, 1864, July 8, 1870.

94. **Emberiza cirlus**. Two specimens, Apr. 27, 1862, Mar. 31, 1883.

95. **Emberiza cinerea**. One identified, not taken, June, 1877.

96. **Emberiza cæsia**. Formerly nearly every May or June; only one seen in past 20 years.

MIGRANTS.

67. **Fringilla montifringilla.** Common, chiefly in Apr. and Sept., Oct.

68. **Carduelis carduelis.** In Apr., May and Oct., seldom 3 to 5 a day.

69. **Spinus spinus.** Irregular, sometimes in profusion in fall, usually rare in spring.

70. **Coccothraustes coccothraustes.** Not common, and only in

STRAGGLERS.

97. **Emberiza cia.** Two specimens, one about 50 years ago, one Mar. 8, 1882.

98. **Emberiza leucocephala.** One specimen, Apr. 16, 1881.

99. **Emberiza pusilla.** Some 25 or 30 specimens since 1845, especially in 1879; all in the fall.

100. **Emberiza rustica.** Some 16 cases since 1839 or 1840, mostly in the fall.

101. **Emberiza pyrrhuloides.** One taken and others seen, Apr. 24, 1879.

102. **Emberiza melanocephala.** Some 15 cases since 1845, all in May or June but one in Aug.

103. **Emberiza luteola.** Two specimens, June 20, 1860, and in Sept. of a later year.

104. **Calcarius lapponicus.** Casual, chiefly in Sept. and Oct.; one taken in full plumage. (Perhaps better in the migrant list.)

105. **Dolichonyx oryzivorus.** Two specimens, each in summer, dates not given.

106. **Montifringilla nivalis.** One specimen, Mar. 30, 1849; another seen late in fall.

107. **Acanthis hornemanni.** One specimen, Oct. 24, 1879.

108. **Acanthis exilipes.** Occasional, with *L. linaria*; common in fall of 1847; one specimen since then, Dec. 1, 1891.

109. **Spinus citrinella.** One specimen, many years ago; one seen Mar. 19, 1849.

110. **Serinus serinus.** Specimens July 14, 1860, June 8, 1879, 5 gray young seen June 28, 1879, and one adult seen July 11, 1879; may have bred that year.

111. **Serinus pusillus.** One seen May 7, 1886.

MIGRANTS.

spring and fall; many in Apr. 1881.

71. **Passer montanus**. Common, and likely to become a breeder.

72. **Pyrrhula pyrrhula**. Irregular, usually rare; common in fall of 1847.

73. **Parus major**. Formerly in profusion, Feb., Mar. and especially Sept. to Dec.; later less common most years, sometimes none.

74. **Parus ater**. Irregular; like the last, but less common; only some 15 specimens for last 25 years.

75. **Parus cœruleus**. Regular, not rare; later in spring and earlier in fall than *P. major*.

76. **Acredula caudata**. Sporadic, sometimes common, especially in fall, as of 1847 and 1878.

77. **Cuculus canorus**. Regular, but rare, and peculiar in times of migration.

78. **Iynx torquilla**. Common, during regular migration.

79. **Certhia familiaris**. Not common, and chiefly in the fall migration.

80. **Cypselus apus**. Common.

STRAGGLERS.

112. **Pyrrhula europæa**. One case.

113. **Pinicola enucleator**. Two specimens, many years ago.

114. **Carpodacus roseus**. One specimen. (See Blasius, Nachträge, p. 195.)

115. **Carpodacus erythrinus**. Four specimens from 1851 to 1884; other cases noted.

116. **Loxia pityopsittacus**. One specimen, many years ago.

117. **Loxia curvirostra**. Formerly frequent, but hardly ever seen since certain poplar trees were destroyed.

118. **Loxia bifasciata**. Occasional, with the preceding; frequent in fall of 1889.

119. **Parus palustris**. One specimen, many years ago.

120. **Parus borealis**. One specimen, Nov. 10, 1881.

121. **Parus kamtschatkensis**. One seen Nov. 1, 1876.

122. **Parus cristatus**. Once taken, twice seen.

123. **Panurus biarmicus**. One taken 50 years ago, one Nov. 8, 1847, one Apr. 5, 1849; seen on a few other occasions,

124. **Alcedo ispida**. Once or twice a year, usually; some years none.

125. **Merops apiaster**. One specimen, many years ago.

126. **Coracias garrulus**. Three specimens first about 50 years ago, last May 25, 1881.

127. **Dryobates major**. Isolated cases, not every year.

128. **Dryobates leuconotus**. One specimen, Sept. 21, 1879.

129. **Gecinus viridis**. Once seen.

130. **Cypselus melba**. One specimen; two other cases.

MIGRANTS.

81. **Hirundo rustica.** Common, sometimes hundreds of thousands, in Apr., May, Sept., Oct., into Nov.

82. **Cotile riparia.** Common, sometimes many thousands with *H. rustica.*

83. **Caprimulgus europæus.** Regular, not common, May, June, and Aug.

84. **Upupa epops.** Almost regular, but rare, some years none.

85. **Coturnix coturnix.** Very rare as a rule; common in Aug. 1878.

86. **Columba palumbus.** Regular, not common, Mar., Apr., and Sept., Oct., Nov.

87. **Columba œnas.** Rare, but usually a few each spring.

88. **Turtur turtur.** Common, May and June; especially so in 1885.

89. **Ciconia alba.** Rare, two or three individuals each spring.

90. **Ardea cinerea.** Rare, chiefly young, in fall.

STRAGGLERS.

131. **Hirundo savignyi** (*cahirica* Licht.). Once seen, May 20 and 21, 1881.

132. **Hirundo rufula.** One specimen, May 31, 1855.

133. **Caprimulgus ægyptius.** One specimen, Aug. 1876.

134. **Syrrhaptes paradoxus.** Common during the great irruption of 1863, also in 1872, again in 1876, greatest irruption of all in 1888, Apr. to July inclusive.

135. **Perdix perdix.** Occasionally reported, but only one specimen, July 17, 1889.

136. **Columba livia.** Taken at irregular intervals, about once in ten years.

137. **Turtur risorius.** One specimen, many years ago.

138. **Otis tarda.** One specimen, Apr. 18, 1895. (See Gätke's Preface.)

139. **Otis tetrax.** Two specimens, about 50 years ago; a third June 27, 1882.

140. **Cursorius gallicus.** One specimen in 1835 or 1836.

141. **Grus grus.** Once seen, Apr. 1867.

142. **Anthropoides virgo.** One specimen, May, 1837.

143. **Ciconia nigra.** Thrice seen; never taken.

144. **Platalea leucorodia.** (No data.)

145. **Ardea purpurea.** One specimen, June 9, 1847.

146. **Botaurus stellaris.** One or two specimens in 60 years.

147. **Ardetta minuta.** One specimen, before 1847.

MIGRANTS.

91. **Numenius arquata.** Myriads in regular migration from Feb. on, and from July on; some vast E. to W. flights in Dec. and Jan.

92. **Numenius phæopus.** In profusion in regular migration, later in spring and earlier in fall than *N. arquata*.

93. **Limosa lapponica** (*rufa*). Rare, hardly more than a straggler, seldom seen in spring.

94. **Charadrius pluvialis.** Very common, especially in fall migration, Aug. to Nov.

95. **Charadrius squatarola.** Common in migration.

96. **Vanellus vanellus.** Common in migration.

97. **Eudromias morinellus.** Common, less so than formerly, chiefly May, and Aug., Sept.

98. **Ægialitis hiaticula.** Common, Mar. and Apr., returning from end of June on.

99. **Ægialitis cantiana.** Rare, hardly regular, but more than a mere straggler.

100. **Scolopax rusticola.** Common; some phenomenal flights; over 1,100 killed Oct. 21, 1823.

101. **Gallinago major.** Rare in spring, hardly common in fall.

102. **Gallinago gallinula.** Common, late in spring and early in fall.

103. **Totanus calidris.** Common in migration, in Apr. and again from end of June on.

104. **Totanus canescens** (*glottis*). Regular, but only common in the all.

105. **Totanus ochropus.** Regular, but only common in fall; in spring from end of Mar. through Apr.

STRAGGLERS.

148. **Plegadis autumnalis.** One specimen, summer of 1824.

149. **Numenius tenuirostris.** One specimen, about 1839.

150. **Limosa belgica** (*melanura*). Three specimens in all Gätke's experience.

151. **Charadrius fulvus.** Three specimens, June 25, 1857, June 18, 1860, July 11, 1867.

152. **Charadrius dominicus.** One specimen, Dec. 20, 1847.

153. **Œdicnemus scolopax.** Six specimens in 50 years, Apr., May.

154. **Ægialitis asiatica** (*caspia*). Two specimens, Nov. 16, 1850, May 19, 1859.

155. **Ægialitis minor.** Two specimens in 50 years, one of them June 1866.

156. **Totanus fuscus.** About 12 specimens in 50 years; only perfect male June 11, 1847.

157. **Totanus stagnatilis.** One specimen, May 7, 1862.

MIGRANTS.

106 **Totanus glareola**. Regular, but very rare in fall; in spring, middle of Apr. to end of May.

107. **Actitis hypoleucos**. Commonest Sandpiper. (Periods not given.)

108. **Tringa canutus**. Regular, rather rare in spring, numerous in Aug. Sept.

109. **Tringa alpina** (including "*schinzi*"). Commonest of its genus, especially in Aug., Sept.; some winter.

110. **Tringa minuta**. Very rare in spring (one May specimen in 50 years); common in Aug., Sept.

111. **Tringa temmincki**. Like the last, but rather oftener in spring, less often in fall.

112. **Arenaria interpres**. Mainly migrant, common in Aug., Sept.; occasional in winter.

113. **Pavoncella pugnax**. Only regular in fall, young birds; adults straggling in summer.

114. **Crymophilus fulicarius**. Not common, but young shot on the sea every fall.

115. **Rallus aquaticus**. Regular, but rare, early in spring and late in fall.

116. **Crex crex**. Common, Apr., May, and Aug., Sept.

117. **Porzana maruetta**. Rare; the few cases, chiefly in May and Aug.

STRAGGLERS.

158. **Actitis macularia**. One specimen, about 1837, in May; one seen May 1847.

159. **Himantopus candidus**. One specimen, about 50 years ago; one seen, June 25, 1879.

160. **Recurvirostra avocetta**. A few cases; last specimen in June 1871.

161. **Tringa subarquata**. One perfect specimen; a few young birds every autumn. (Perhaps rather belonging to the migrant list.)

162. **Limicola pygmæa**. One specimen, May 29, 1855.

163. **Tryngites subruficollis**. One specimen, May 9, 1847.

164. **Phalaropus lobatus**. Four specimens; first Nov. 1837, second May 15, 1870.

165. **Porzana parva** (*pusilla* Licht.). One specimen, Apr. 22, 1854.

166. **Porzana bailloni** (*pygmæa* Naum.). Two specimens, both May, the second one May 28, 1890.

167. **Gallinula chloropus**. Ten specimens in 50 years.

168. **Fulica atra**. Six or eight specimens in 50 years.

MIGRANTS.

118. **Anser cinereus.** Regular migrant each season.

119. **Anser segetum.** Commonest Goose.

120. **Anas boschas.** Not common in migration; emaciated birds occasional in winter.

121. **Querquedula crecca.** Common in both migrations.

STRAGGLERS.

169. **Cygnus olor.** One specimen many years ago, another Feb. 21, 1881.

170. **Cygnus bewicki.** One specimen, Mar. 17, 1875.

171. **Anser brachyrhynchus.** Two specimens, Mar. 30, 1880, a third in Oct. 1880.

172. **Anser albifrons.** One specimen about 40 years ago, another about 1888.

173. **Anser minutus.** One fall specimen, about 50 years ago.

174. **Chen hyperboreus.** None taken, but several cases, in winter and May.

175. **Bernicla leucopsis.** Two specimens in 50 years.

176. **Dafila acuta.** Five or six cases in 50 years.

177. **Chaulelasmus streperus.** One specimen, many years ago.

178. **Querquedula circia.** Three specimens in 50 years.

179. **Spatula clypeata.** One specimen, many years ago.

180. **Oidemia perspicillata.** One specimen, Oct. 9, 1855.

181. **Nyroca nyroca.** One specimen about 50 years ago.

182. **Somateria spectabilis.** One specimen, Jan. 11, 1879.

183. **Eniconetta stelleri.** Three young specimens, winter of 1844-45; a fourth Feb. 11, 1855.

184. **Larus affinis.** One specimen Aug. 20, 1870.

185. **Larus ichthyætus.** One case before Gätke's time, and probably one other.

186. **Larus philadelphia.** One specimen, "winter of 1845," qu. 1844–45, or 1845–46?

187. **Xema sabinei.** Two young specimens, Oct. 25, 1847, Oct. 28, 1883; another seen Nov. 10, 1883.

MIGRANTS.

122. **Sterna cantiaca**. Commonest Tern, Apr. to end of summer (no breeders).

123. **Sterna paradisæa** (*macrura*). Common, last half of May, again in Aug.

124. **Sterna hirundo**. Common Apr. to end of summer (no breeders).

125. **Gelochelidon nilotica**. Chiefly May to July, rare, over the land, not fishing at sea.

126. **Hydrochelidon nigra**. Rare or irregular, in migration, sometimes common in fall.

127. **Stercorarius pomatorinus**. Very rare in spring, young frequent or numerous in Oct. Nov.

128. **Stercorarius parasiticus**. Commonest Jaeger in migrations, less so now than formerly.

129. **Stercorarius longicaudus** (*buffoni* Boie). Hardly more than a straggler, but seen almost every fall; two adults taken in summer.

130. **Puffinus anglorum**. Formerly common; has totally disappeared within 25 years.

131. **Colymbus minor**. Frequent; periods not given.

STRAGGLERS.

188. **Rhodostethia rosea**. One specimen, Feb. 5, 1858.

189. **Gavia alba**. One adult identified, Jan. 20, 1850.

190. **Sterna dougalli**. Two specimens in 50 years, old summer birds.

191. **Sterna minuta**. None seen for past 10 years.

192. **Sterna tschegrava** (*caspia* Pall.) Exceptional; only one specimen ever taken, June 22, 1880.

193. **Megalestris skua**. Several cases; only specimen Nov. 6, 1885.

194. **Puffinus major**. Probably two cases; one specimen.

195. **Puffinus fuliginosus** (given as "*griseus* Gm."). One specimen, Oct. 25, 1888.

196. **Cymochorea leucorhoa**. Several cases; 3 specimens in Dec. 1850, 4 in Nov. 1888.

197. **Uria lomvia**. One specimen, many years ago.

198. **Cepphus mandti**? One specimen, probably of this species.

199. **Colymbus cristatus**. Casual in winter; two cases in spring.

200. **Colymbus nigricollis**. One specimen, date not given.

Taking the four preceding lists as they stand, we have the following summary: —

Stragglers, for the most part entirely beyond their normal range.	200
Migrants, more or less regular, mainly in spring and fall. . . .	131
Winterers, in some cases appearing at other seasons.	50
Breeders, but in most cases not regularly so.	16
Total	397

This exhibit is simply phenomenal. In the first place the total is enormous, for such an apparently inelegible and even forbidding spot in comparison with almost any fairly favored locality of such restricted extent, say in Germany, Great Britain, or the United States, where a list of 300 species would be a pretty large one. In the next place, and especially, the relative proportions of stragglers, migrants, winterers, and breeders are far and away from what is known of any other locality. There is no question of the approximate accuracy of the lists, whatever be the requisite rectification of Gätke's determinations in a very few cases, or any little readjustment of the figures for the four categories I have made out. No doubt Herr Gätke has been imposed upon in certain cases which he admitted upon hear-say evidence, and perhaps neither J. A. Harvie-Brown nor W. E. Clarke has compared Rosenstock's translation with the original German. But no such changes as these points may involve can affect the result materially. We have therefore to seek some explanation of the anomalous Heligolandish ornis.

The most obvious factor in the case is of course Herr Gätke himself and the very unusual length of time which he has devoted to an extremely close scrutiny of the avifauna of a little bare island where birds cannot easily escape observation. We have thus a remarkable man, working under exceptionally favorable circumstances. Moreover, the record goes back of him — to 1827 at least — and in the general result we have the coöperation and contributions of several expert gunners, fowlers and taxidermists, to say nothing of a generation or two of boys with their pea-shooters. We should therefore expect a large total, and a large proportion of rarities. But after making all due allowances to eliminate the "personal equation," the main features of the case appear to be intrinsic, attributable to Heligoland itself, in its

physiography, its environment, and especially its geographical position with reference to flight-lines. It may be called a Mecca, metaphorically, and with scarcely a figure of speech a magnetic pole, so powerfully does it seem to attract birds. No wonder that Herr Gätke speaks with enthusiasm of "Heligoland whose superior rank in the domain of bird-life is uncontested by the proudest empire," and of what he calls the "honorary citizenship" he has had the pleasure of conferring upon so many feathered representatives of Asia, Africa, and North America.

The slight annotations of the foregoing lists to which I am almost necessarily restricted in an article like the present give but a hint of the wealth of detail which Gätke's work embodies. Those who would pursue the subject beyond this wholly inadequate outline must of course read the book itself — say rather, study it carefully. But it is somewhat expensive, very special, and unlikely to be widely known in this country beyond ornithological centers; and I have not yet touched upon some matters it includes, which will be for many readers of 'The Auk' still more surprising than anything that has preceded thus far in the present sketch. For such an enormous and apparently fortuitous concourse of birds upon a single rock in the sea excites our curiosity to know how they get there; and this of course raises the whole question of migration-flight.

Gätke probably knows more about the ways of birds in the air than any other person now living, possibly than any person who has ever lived; consequently, he is modest in expressing his views, and simple in stating his facts. He makes none of the hasty generalizations and valiant asseverations to which the conceit of youthful ignorance is prone, and never dogmatizes — though no one else could be so easily forgiven excathedration. The most conspicuous result of his insistence upon the facts in the case is rank iconoclasm. He smashes our idols right and left; he leaves us at the mercy of our fables, helpless for lack of gods to supplicate, for he sets up none of his own in their places. He pushes explanation to the inexplicable; flight remains for him an "insoluble problem," and migration, a "wondrous mystery." Gätke knows too much about these things for our peace of mind, especially if we have ever plumed ourselves on our opinions to

the superfluous extent of strenuously insisting upon them in print. He files a general caveat we shall do well to heed. Isepipteses and magnetic meridians, coast-lines and river-channels, food-supply and sex-impulses, hunger and love, homing instincts and inherited or acquired memory, thermometer, barometer and hygrometer, may all be factors in the problem, good as far as they function; but none of them, and not all such together, can satisfy the whole equation. The subject has engaged the attention of many able writers; but the very excellence of Gätke's contribution to the scientific aspects of the case certifies that he has not said the last word, for it is sure to stimulate further research and excite renewed discussion. He devotes a chapter to each one of the following subjects: The course of migration generally in Heligoland; direction of the migration flight; altitude of the migration flight; velocity of the migration flight; meteorological conditions which influence migration; order of migration according to sex and age; exceptional migration phenomena; what guides birds during their migrations; and finally, the cause of the migratory movement. To go into any particulars here would be to slight others equally interesting and often equally surprising; but some points may be merely mentioned. Instead of north and south movements in all cases, there are some east and west, at right angles with meridians, independent of coast-lines. Instead of the thousands of migrants we may see, or the hundreds of thousands we may estimate, we are told of the millions and billions — such incalculable myriads flying past a single rock that all the destruction human agency could effect in all time would be inappreciable. Some of the distances, altitudes, and velocities of which migrating birds are proved to be capable would be incredible were they not so well attested; and such capacities for flight are shown in some instances of birds we are not accustomed to consider very good fliers. Meteorological conditions influence migration more profoundly than we commonly suppose; the alternation of day and night has some unsuspected effects. Birds are really better weather-prophets than our official 'forecasters' always show themselves to be, if not quite as good as the Roman haruspices supposed avian augury was. Birds in the water can in some

cases alter their specific gravity to an extent which Gätke witnesses without pretending to explain; but it would seem that they can do the same in the air, and that some of their modes of flight, notably their sailing, are absolutely in defiance of much that has been alleged and believed. Instead of answering the question, "What guides birds during their migrations?" Gätke says (p. 142):—

"Having thus examined the various attempts made to explain the wonderful faculty possessed by migrants of discovering the right path of their migrations, and shown how insufficient most of them are when confronted with actual facts, observed directly in nature, in the course of more than fifty years' investigations and at a spot so favored as Heligoland, I cannot say that I feel encouraged to add further to the number of such attempts by others of my own."

And for another modest disclaimer, which can be commended to any who show symptoms of omniscience in the pleasing paths of ornithology (p. 148):—

"Both in regard to this question as to the immediate departure of birds on their migrations, as well as in reference to that propounded in the previous chapter [just cited], we are confronted with a riddle which has hitherto defied every attempt at a solution, and which indeed we may hardly expect will ever be likely to receive a final explanation. Long and profound study has been devoted to this subject in many quarters, and has resulted in the enunciation of several very ingenious and plausible hypotheses. None of these, however, will stand their ground when the actual facts, which the life of birds in nature presents in such abundance, are marshalled against them. . . . In treating of the various momenta of the migratory flight, we have striven as much as possible to place before the reader only such facts as are beyond question or criticism, but no attempt has been made to furnish a solution of the wide problems which they involve. In thus abstaining from setting forth new theories, I have been guided by the conviction, rendered firmer with increasing knowledge of the phenomena, that what at present has been ascertained in reference to the migration of birds furnishes us with no clue by the aid of which we are enabled to penetrate the depths of this wondrous mystery."

This conclusion concerning "the way of the eagle in the air" is identical with that ascribed to the old Hebrew ornithologist, who had a great reputation for sagacity, in spite of his comprehensive connubialities; and may be aspired to by some of the present gentile generation.

Yet one other chapter of Gätke's remarkable book should not be passed without remark in the present review. This is in a different field of research, as it treats of changes in the coloration of plumage without the loss or gain of any feathers. To this phenomenon, for which I lately coined the word aptosochromatism, Schlegel called particular attention in 1852, and the novelty of his views excited much attention. The subject is better known now, but is far from being exhausted, and Gätke's contribution to its elucidation is extremely valuable. The two main factors in the case, namely, variation in pigmentation and alteration in texture and shape with wear and tear, are understood; but the processes are more complicated than would appear at first sight, and there are several ways in which the observed changes may be brought about, in different species, in the same bird at different seasons, in different feathers of the same bird, and finally, in different parts of the same feather. Some of the modes in which fresh pigment may be deposited in and spread through a feather, and then be modified or withdrawn, are curious, and not less so are the ways in which an optical effect is produced by a sort of exuviation in the feather itself, aside from any such simple process as the wearing away of a tip or an edge — in other words, it is a vital rather than merely mechanical matter, which is probably much more concerned than we are fully aware in freshening coloration. Aptosochromatism would not seem to be a subject of special difficulty, or one requiring particular training for its successful study. It is simply a matter of precise and patient examination of a large amount of material, and offers an inviting field of research, in which some bright young ornithologist might win enviable laurels.

NEW RACES OF *COLAPTES* AND *PASSERELLA* FROM THE PACIFIC COAST.

BY A. W. ANTHONY.

IT is with considerable hesitation that I venture to name a race of *Colaptes* from so near the type locality of *chrysoides*, but I can make no other satisfactory disposition of the birds from the region of San Fernando, and have separated them from the Flickers of Cape St. Lucas and Arizona to be known as: —

Colaptes chrysoides brunnescens, subsp. nov. BROWN FLICKER.

Subsp. char. — Differing from *C. chrysoides* in darker upper parts and slightly smaller size.

Type No. 5356, ♂, Coll. A. W. A., San Fernando, Lower California, May 27, 1894. — Above brown, of a shade approximating bistre, barred with numerous black bars; pileum cinnamon brown; upper tail-coverts white with large rounded spots of black; below grayish white with numerous round and cordate black spots; throat dark ash gray; mustache bright scarlet; quills and inner surface of wings chrome yellow; lower surface of tail wax-yellow, terminal third black.

All of the specimens that I have examined from Arizona and Cape St. Lucas have the tips of the primaries more or less marked with white, which marking is nearly always lacking in my skins from the northern part of the peninsula, only one specimen — a female — showing a very little white on that part of the primaries. The character may not be of any value, as it is probably somewhat individual, but it is sufficiently noticeable in the series before me to be worthy of mention.

It would be quite natural to expect specimens of *Colaptes* from the northern half of Lower California to be more or less intermediate between those of Arizona and Cape St. Lucas. They are, however, further removed from the type form from the Cape than are those from Arizona and northern Mexico, and in the series I have examined the Arizona skins are exactly intermediate in the color of the upper parts between a series from Cape St. Lucas and my skins from San Fernando.

Mr. F. Stephens recently called my attention to a series of Thick-billed Sparrows in his collection from the mountains of southern California that differed very considerably from specimens from the Sierra Nevada. The birds in question are principally from the San Jacinto Mts., where, later in the season, I found them in abundance inhabiting all suitable localities between the altitudes of 7000 and 9000 feet.

A series was secured but unfortunately they were all in very ragged, postbreeding plumage. So badly is the plumage worn that it is rather unsafe to venture an opinion as to its probable shades, and the measurements of the wings and tail can only be approximately obtained. However, with the specimens that Mr. Stephens has very kindly placed at my disposal I have ventured to separate the southern race, to be known in honor of its discoverer, to whom I am indebted for the privilege of describing it.

Passerella iliaca stephensi, subsp. nov. STEPHENS'S SPARROW.

Subsp. char.— Differing from *P. i. megarhyncha* in larger size, the bill especially being much larger than in that race.

Type No. 6651, ♂, Coll. A. W. A., San Jacinto Mts., Calif., July 14, 1895.

The type of *megarhyncha* was taken by Xantus at Fort Tejon and was doubtless a winter bird from the Sierra Nevada, as the genus is not found about Fort Tejon, except as a winter visitant from the northern mountains.

One of Xantus's skins (No. 13,757, Coll. Nat. Mus.) is before me. This specimen is perhaps immature, but is practically the same as specimens from Alpine and Butte Counties, and very different from breeding birds from the San Jacinto and San Bernardino ranges.

The most striking characteristic of the new race is the large bill, which is always larger than that of the largest *megarhyncha.*

Only one of the southern specimens — an unusually small female from San Bernardino Mts. — is as small as the largest specimen of *megarhyncha* I have examined, and in this specimen the bill is as large or larger than the largest bill found in the *megarhyncha* series. The comparative measurements of the two races can be seen in the following tables. Unworn specimens would somewhat exceed in wing and tail the measurements given for the specimens from the San Jacinto Mts.

PASSERELLA ILIACA MEGARHYNCHA.

No.	Collection.	Locality.	Sex.	Mm. Wing.	Mm. Tail.	Mm. Tarsus.	Mm. Culmen.	Mm. Depth of Bill.	Remarks.
13757	U. S. Nat. Mus.	Ft. Tejon, Cal.	♂	82	97	24		10	Topotype. Tip of bill gone.
5906	F. Stephens.	Butte Co., "	♂	83	96	24	11.5	10	
5969	"	Alpine Co., "	♀[1]	76	86	23	11	9.5	
6657	A. W. Anthony.	Blue Cañon, "	♂	83	94	24	12.5	10	
6658	"	" "	♂	80	89	24.5	12.5	10.5	
6659	"	" "	♂	80	96	25	11	10	

PASSERELLA ILIACA STEPHENSI.

6650	A. W. Anthony.	San Jacinto Mts., Cal.	♂	85	96	25	14	11	Badly worn postbreeding plumage.
6651	"	" "	♂	83	92	24	13	11.5	Type. Badly worn postbreeding plumage.
6652	"	" "	♂	83	89	24	14	11.5	Badly worn postbreeding plumage.
6653	"	" "	♀	80	92	23	14	12	" " " "
6654	"	" "	♂	86	89	24	14	11.5	" " " "
6655	"	" "	♀	81	92	24.5	13	11.5	" " " "
6656	"	" "	♀	80	92	26	14	12	" " " "
—	"	" "	♂	82	92	24	14.5	11	" " " "
2833	F. Stephens.	S. Bernardino "	♀	91	100	25	15	12	
2842	"	" "	♀	79	88	23	12	10.5	
5746	"	" "	♂	84	99	26	13	12.5	

[1] Immature.

THE BROWN CREEPER NESTING IN THE CYPRESS SWAMP OF SOUTHEASTERN MISSOURI.

BY O. WIDMANN.

IT was a few minutes after five in the morning of June 2, 1894, when I heard a shrill whistle of four distinct notes, *tsee, tsee, dill did*, something entirely new and not attributable to any bird of my knowledge. The whistle was repeated about a dozen times, at intervals of a few seconds, and it came from a distance of less than twenty yards, but the light of the young day had not yet mastered the gloom of the forest, and when the song ceased I had no idea to what family the songster might belong.

Of one thing I was positive: the notes did not belong to any of our regular breeders. This was enough to arouse my curiosity to the utmost, since I knew that spring migration was over in that region. The very latest of migrants had left it, and only summer sojourners were met with the last few days. A roving flock of Cedarbirds was the only species that had not yet settled down to domestic life. Indeed, fall migration had already begun, if it is allowed to regard the flocking of young Bronzed Grackles into a common roost as the first stage of it. The only hope to identify my bird was by waiting patiently until it would sing again. So I waited near the trees where I had heard the song.

The forest was full of bird song at this early hour and it resembled with its arched tupelos and pillar-like cypresses a huge cathedral; the floor a blinking sheet of water without any underbrush; the aisles resonant with the monotonies of Protonotaria; the cornices tenanted by a choir of noisy Redeyes, Redstarts and Cerulean Warblers, with frequent *veerees* of the Yellow-throated Vireo, and occasional outbursts by an exalted Baltimore or Orchard Oriole.

As time wore on, all birds of the forest had their turn in singing. Now and then the Parula and Sycamore Warblers laid in a few repetitions of their lofty cheerings and the Wood Thrush became loud in the praise of the pleasant coolness of the morning hours.

Overhead were frequent bickerings in the sphere of a pair of Wood Pewees, who were busily engaged in the construction of their nest. There were Acadian Flycatchers with startling exclamations and mysterious wing-whistlings, soliloquies of the Warbling Vireo, effusions by Indigos and Cardinals, innumerable *willitzkis* of the Maryland Yellow-throat, and from time to time a modest opinion by the weather-wise Cuckoo.

As the hours passed on and the sun's rays had destroyed all dimness in the forest, the Wood Thrush turned the leadership over to the Summer Tanager, and the pauses made by the earlier songsters grew longer and longer. Two pairs of Hooded Mergansers, who at first had been much incommoded by my presence and had repeatedly shown their anxiety by circling wildly and with notes of alarm through the treetops, were now visiting their nest-holes without fear. At this season the beauty of the male's dress and coiffure is entirely gone; both parents resemble each other so much that they are generally mistaken for female Wood Ducks, which are also very common breeders in these swamps. Both species breed sometimes together in small colonies and so near human habitations that their coming and going may easily be watched by the people. A lady residing at Byrd's Mill witnessed the act of removing the young from the nest, sixty feet above ground. The young were brought down, one by one, clinging to the back of the parent and holding fast with the bill. That they are clever climbers I can testify myself; I have seen them climb up the inside of a drygoods box, two feet high, holding fast to the planed boards with their sharp claws and stiff tail-feathers.

It was now ten o'clock and my patience was nearly gone. Every noise in the forest had been attentively listened to and every moving speck followed, but in vain. Silence began to become oppressive. I rapped woodpecker-fashion against a half-rotten stump. Almost as if by magic a pair of Pileated Woodpeckers appeared on the scene; a second rap brought them still nearer, evidently bent on the closest investigation.

At the same time the four shrill notes were heard in close proximity and turning in the direction a small bird was seen flitting past and alighting against the trunk of a tupelo a few

feet above the water and only a few yards from where I was half-hidden among fallen timber and stumps. It began to sing as soon as it had alighted and hopping up the side of the tree repeated the strange notes several times. There was no doubt possible, the bird was less than ten yards from me, in good light for half a minute as it went up the tree in its well-known fashion; it was Certhia, the Brown Creeper. My surprise was so much greater since I thought I had become acquainted with the song of that bird during a visit to this region in March, when I had heard it almost daily and on some days quite often.

Of course, I began at once to look about for the traditional detached bark, but there was so much of that article on the old dead cypresses that I had to give up the idea of hunting for its nest. I lingered for another hour, but my patience was exhausted and I left the home of the Missouri Certhia to its rightful owners, including mosquitos and moccasins, both of which seemed to become provoked by my persistent stay.

In May, 1895, I visited the same locality again. I did not meet with Certhia on the first day; but on the morning of the second, May 15, I had hardly entered the swamp, when I heard its song and a few moments after saw the bird, a Brown Creeper, alight against a dead cypress (*Taxodium distichum*) five feet above the water. The tree or stump was about fifty feet high and two feet in diameter. Its base was devoid of bark and on one side the bark had detached itself in a sheet, fifteen feet long and was hanging down like a streamer. Above, the bark was peeling off in shreds, and the whole stump was a picture of dilapidation and dissolution.

The bird hopped deliberately up to a place where the bark was loosened in such a way as to form a pocket, closed above and below and on one side, with an opening of one and one-half inches at its widest. There the bird halted just one second, peeped in, flitted to another tree, and gave a song.

This peeping into that pocket looked suspicious, and I thought I would like to peep in myself. But how to get there? It was fourteen feet above the water and climbing out of question. I had to get a ladder. That was no easy matter, but an hour later I came back with a boy, a small spoon, and a home-made ladder of barbarous weight.

Yes, there was the nest as I suspected; a bulky accumulation of shreds of cypress bark loosely thrown in below, but more and more compact toward the elliptical cavity, which was an inch deep and warmly lined with a felt-like material. Imbedded in, and partly covered with felt lay one egg of white color with fine red dots. I did not disturb the nest and quietly left the place.

At first I cherished visions of such a desirable thing as a full set, but recalling instances when rare opportunities were lost by too long waiting, I returned on the 17th, took the three eggs which the nest contained, sawed off the detached plate of bark, about 8-16 inches, liberated the nest from its imprisonment and my mind from the growing fear to lose it.

The nest had the peculiar structure, by which the nest of the species may always be known from other nests in similar situations, and which is minutely described by Mr. Brewster in Volume IV of the Nuttall Bulletin.

The locality where the nest was found is the Little River overflow, east of Cotton Plant, Dunklin Co., Mo., seven miles from the south line of the peninsula. The flora as well as the ornis of this region is highly interesting. While the botanist finds that the Floridan and Texan floras meet in the sandy fields and swampy woods of the Peninsula of Missouri, the ornithologist who sees the Canada Goose and Black Vulture, the Brown Creeper and Swainson's Warbler on neighboring breeding grounds, is liable to have new surprises at every visit.

Though only a ridge of a few miles in width separates the Little River region from the St. Francis basin, both flora and ornis differ somewhat, the latter mainly through absence from the Little River region of birds which habitually feed on dry ground. The stage of water in the St. Francis is dependent only on the precipitation in the region which it drains; it rises to a well defined height which it reaches every year and from which it slowly recedes in summer.

With the Little River it is different; bayous connect it with the Mississippi and a high stage in the latter pours its muddy waters through the bayous into the Little River, causing a rise of five or six feet above the ordinary yearly overflow. The occurrence of such great floods has been uncomfortably frequent of late; that

of 1893 came within one foot of the highest known to white settlers, that of 1882.

During these inundations the waters remain from one to two weeks, sufficiently long to drown a variety of plants and to kill others by covering them with a sticky coat of mud.

Such floods have been so much more effective destroyers of vegetation as they occurred late in spring, even in June, when submersion is more detrimental than in early spring.

At a certain time the Little River is, as its name says, only a small affair, but it keeps within its narrow bed only during the driest part of the year; in winter and all through spring into summer the width of its overflow is from two to six miles. The large area covered by this regular overflow is the territory most conducive to the growth of the cypress, tupelo (*Nyssa uniflora*), waterelm (*Planera aquatica*), *Acer rubrum drummondii*, *Polygonum densiflorum*, and *Zizania miliaria*, the southern wild rice. Among the shrubs we see the ornamental *Itea virginica*, growing on top of a water-soaked stump, and the interesting cork plant, *Leitneria floridana*, which often attains the size of a small tree.

The young growth is generally thin; so much more voluminous is the debris which covers the ground and which, together with the cypress-knees and stumps left by the lumberman, make progress either on foot or in dugout very difficult in places.

South of the Missouri State line the open river enlarges to such an extent that it is called Big Lake, a region much frequented by all kinds of water birds and a fruitful field for the market-hunter. The merchant at Hornersville told me that in the winter 1893–94 the number of ducks sent to market from the region of Big Lake amounted to 150,000, four-fifths of which were Mallards. One hunter held receipts for 8000 Mallards, killed and shipped by him alone.

It may be that the season was exceptionally good, in accordance with Nature's great powers of compensation. The same agency which destroyed the crops in summer caused the presence of unprecedented numbers of ducks in winter. Even Blue-winged Teals, which were not known to winter in this latitude, remained in small numbers.

All kinds of ducks occur at some time or the other, but the Mallard is the principal duck for winter shooting. Green-winged

Teals are only killed for the hunter's table. Gadwalls are plentiful but neglected, because not in demand on account of the fishy taste of their meat. Spoonbills and Ringnecks are not desirable. Pintails are taken in great numbers in the fall, but they pass rapidly through on their return in spring.

Trapping was the main occupation of the people formerly and is still followed to some extent, but duck shooting in fall and winter, and bullfrog-gigging in spring form now a considerable source of the income of the inhabitants of the region in which the revenues from agricultural pursuits are seriously curtailed by the floods.

The soil is sandy and the products are few. Cotton is the main staple. Corn is raised for home use only and peas for hay. Grasses and clover do not thrive and their almost total absence from the ground causes an emptiness which, to one not used to it, is somewhat painful.

An extra source of income, but one of short duration only, was found when the Egret-plume craze came into vogue, some seven years ago. The Egret, *Ardea egretta*, or White Crane as it is always called, used to be an abundant breeder in the peninsula, and several large 'crane-roosts' existed in the Little River and St. Francis region. One crane hunter told me that he cleared $800 from the sale of his crane feathers, and there were many such fellows busy with the extermination of the 'White Crane,' which these men now consider complete, as far as southern Missouri and northern Arkansas are concerned. No plume-hunting of any consequence has been going on for the last four years, and it is therefore delightful to hear that at least one colony of Egrets has escaped the murderous gun and is being preserved on guarded ground. The owner of the ground is said to be satisfied with gathering those plumes which the birds cast off during the breeding season and which are found in salable condition on the ground below their roosts.

A COLLECTION OF BIRDS FROM MOUNT ORIZABA, MEXICO.

BY ULYSSES O. COX.

IT was my good fortune to be a member of Dr. J. T. Scovell's party which visited Mount Orizaba during the summer of 1891 for scientific purposes. One week was spent at the city of Orizaba, altitude 4,000 feet, and about the same time at San Andres, altitude 8,200 feet, and on the mountain itself. It rained nearly the entire time while in the city of Orizaba, so very little collecting was done, and, on account of the condition of the weather, but few birds were seen. The country around the city of Orizaba is very broken and the mountains, which are foothills of the volcano itself, are covered with timber. Ordinarily the city must be an excellent collecting ground for birds.

At San Andres the surrounding country is entirely of volcanic origin and for the most part is barren, but on the side of the peak the timber, chiefly pine, extends down to within a few miles of the city. Below the timber line birds were not numerous but when the timber line was reached they were quite abundant. The mountain above lower timber line is scarcely at all inhabited and rarely has the axe disturbed the peace of the stately pines. At an elevation of 14,000 feet the timber disappears and snow line is reached.

I wish to acknowledge my indebtedness to Dr. J. T. Scovell of Terre Haute, Indiana, by whose kindness I was permitted to make the collection; to Mr. Robert Ridgway of the U. S. National Museum, who has assisted in the identification of the specimens and who discovered and described the one new species; also to Prof. A. J. Woolman of Duluth, Minnesota, who assisted in the preparation of the skins.

The following species were either taken or observed, and in each case it is so stated:—

1. **Catharista atrata** (*Bart.*). BLACK VULTURE.— This bird was very common in the city of Orizaba where it was semi-domesticated. It was so tame that a person could walk within a few feet of it before it would fly,

and it was interesting to watch its actions around the piles of offal which the birds and dogs shared in common. These Vultures seemed to go in flocks of eight to ten.

2. **Syrnium nebulosum sartorii** *Ridgw.* MEXICAN BARRED OWL.— A Barred Owl was seen in the deep pine forests about half way up Peak Orizaba but I was not able to shoot it. It appeared very much like our common *S. nebulosum*.

3. **Dryobates stricklandi** (*Malh.*). STRICKLAND'S WOODPECKER.— A specimen of Strickland's Woodpecker was taken at an altitude of 11,000 feet, but unfortunately it was so mutilated that it was not preserved. Several others were seen. The species, of course, is doubtful.

4. **Petasphora thalassina** (*Sw.*).—Two specimens were taken at 11,000 feet.

5. **Cœligena clemenciæ** *Less.* BLUE-THROATED HUMMINGBIRD.— Two specimens, a male and a female, were taken at an elevation of 11,000 feet on Peak Orizaba. It was noticed that this species kept up a continual chattering similar to that of a Sparrow.

6. **Selasphorus platycercus** (*Sw.*). BROAD-TAILED HUMMINGBIRD.— Two specimens were taken at 11,000 feet on Peak Orizaba. They were seen flying around flowers and were heard to chirp a few short, distinct notes.

7. **Basilinna leucotis** (*Vieill.*). WHITE-EARED HUMMINGBIRD.— One specimen was taken at an elevation of 11,000 feet on Peak Orizaba.

8. **Myiozetetes texensis** (*Gir.*). TEXAN FLYCATCHER.— One specimen was taken at an elevation of 9000 feet.

9. **Empidonax fulvipectus** *Lawr.*— This Flycatcher was taken at an elevation of 10,000 feet. Another was seen, but my observation would lead me to think that this species was not common.

10. **Aimophila supercilliosa** *Sw.*— This Sparrow was found very abundant from San Andres up the mountain to an elevation of 11,000 feet. It is a fine singer and rather tame. Four specimens were taken.

11. **Carpodacus mexicanus frontalis** (*Say*). HOUSE FINCH.—Very common about the houses in the town of San Andres.

12. **Chamæospiza torquata** (*DuBois*).— One specimen was taken of this shy but beautiful bird. The note was very pleasant and, while I saw but one, I judge it lives mainly in bushes.

13. **Euetheia pusilla** (*Sw.*).— One specimen was taken on a high bluff near the city of Orizaba. No others were seen.

14. **Junco cinereus** (*Sw.*). MEXICAN SNOWBIRD.— This rather common bird was taken at the foot of Mt. Orizaba, San Andres, also at an elevation of 11,000 feet.

15. **Pipilo fuscus** (*Sw.*). BROWN TOWHEE.— One specimen taken at the city of Orizaba and one taken at the lower timber line of the Peak.

16. **Pipilo orizabæ** *Cox.* ORIZABA TOWHEE.— (Auk, Vol. XI, 160, April 1894.).

"Sp. Char.— Most like *P. maculatus* Sw., but no black whatever on upper parts, which are plain grayish brown; white markings of scapu-

lars and wing feathers nearly obsolete, sides and flanks much paler in color, and size somewhat greater.

"*Adult male* (132,720, U. S. National Museum, Mount Orizaba, Mexico, alt. 11,000 feet; Ulysses O. Cox): Above uniform dull grayish brown, slightly tinged with olive, scarcely darker on the head; outermost scapulars with marginal elongated spots of white, and lowermost middle and greater wing-coverts with more roundish terminal spots of the same; no white markings on the remiges, but primaries edged with light brownish gray; tail (except middle feathers) very dark brown, the three outermost feathers with a large, abruptly defined white spot terminating the inner web, that on the lateral feather nearly one inch long. Chin, throat, and chest blackish brown, gradually lightening on the sides of the head and grading gradually into color of the crown, the throat spotted with white beneath the surface; sides, flanks, and under tail-coverts ochraceous buff, somewhat deeper anteriorly; median lower parts white, broadest and purest anteriorly next to blackish brown of the chest. Bill black; legs light brown, toes darker. Total length (skin), 8.30; wing, 3.35; tail, 3.85; exposed culmen, 0.60; tarsus, 1.17; middle toe, 0.78."

17. **Aphelocoma sieberii** (*Wagl.*). SIEBER'S JAY.—Two fine specimens were taken near San Andres at the beginning of the timber on Peak Orizaba. Others were seen.

18. **Corvus corax sinuatus?** (*Wagl.*). MEXICAN RAVEN.—One was seen and heard about midway between lower timber line and snow line on Peak Orizaba.

19. **Lanius ludovicanus excubitorides** *Sw.* WHITE-RUMPED SHRIKE.—One specimen was taken near the timber line at the foot of Peak Orizaba. No others were seen.

20. **Dendroica olivacea** (*Gir.*). OLIVE WARBLER.—Two specimens, a male and a female, were taken at an elevation of 11,000 feet. No others were seen.

21. **Ergaticus ruber** (*Sw.*). RED WARBLER.—One specimen was taken at an elevation of 11,000 feet, Several others were seen.

22. **Troglodytes brunneicollis** *Scl.* TAWNY-THROATED WREN.—Two specimens were taken at an elevation of 11,000 feet and a number of others were seen.

23. **Certhia familiaris alticola** *Mill.* MEXICAN CREEPER.—Two specimens taken at 11,000 feet.

24. **Sitta pigmæa** *Vig.* PYGMY NUTHATCH.—One specimen was taken at the city of Orizaba and two at snow line, 14,000 feet, on Peak Orizaba. They were quite abundant at the latter place.

25. **Sitta carolinensis mexicana** *Nels. and Palm.*—One specimen, taken at an elevation of 9000 feet. Not common.

26. **Parus meridionalis** *Scl.?* MEXICAN CHICKADEE.—This can only be reported as doubtful for the specimen taken was so mutilated that it was not preserved.

27. **Regulus satrapa aztecus** *Lawr.* ♀—Can only be reported as doubtful, since the specimen was not preserved. Others were seen.

28. **Sialia mexicana** *Sw.* MEXICAN BLUEBIRD.—One specimen, a young bird, was taken at the snow line, 14,000 feet. Several others were seen.

In addition to the above species a flock of Parrots was seen and their notes distinctly heard, above the deep pine forest about midway between upper and lower timber lines on the Peak.

AN HISTORIC LETTER.

BY JOHN H. SAGE.

MR. GEORGE W. CONCKLIN, of Portland, Conn., recently presented me with a letter which I think of historic interest enough to be published. It was written by Mr. John L. Gardiner of Gardiner's Island, N. Y., to Alexander Wilson, and dated April 30, 1810. The date as given is erased in pencil and June 5 (also in pencil) written over it. The letter is superscribed: "Mr. Alexander Willson, Author of the American Ornithology, Philadelphia," but there is nothing to show that it was ever sent, being kept probably as a copy. In Wilson's account of the Fish Hawk he speaks of his "worthy friend Mr. Gardiner," and quotes practically from this letter in many instances. When writing of the Bald Eagle, Wilson refers to "Mr. John L. Gardiner, who resides on an island of three thousand acres, about three miles from the eastern point of Long Island, from which it is separated by Gardiner's Bay," words almost identical with those written in the letter before me. The gentleman who gave me the letter is well along in years and a relative of the Gardiner family. He tells me that the precious document had been in the possession of his father for many years previous to his death.

"Gardiner's Island April 30th 1810.

"Mr. Alexander Willson.

"I have received so much instruction & amusement from reading your first and second volume of Ornithology and as a real American am so well pleased with the execution of the work

particularly the 2d Vol. — as to the plates — that I cannot omit giving you the trouble of hearing how much pleasure you have given a plain farmer — in publishing your works, — which as to its execution of every kind has not been exceeded in America — A work of so much celebrity cannot fail of handing your name down to posterity with eclat. Before I had even seen the first volume I had become a subscriber and am particularly agreeably disappointed as to the manner of your description of the birds — their manners & customs. If it will not be deemed impertinent I will suggest to you how pleasing it will be to me & others that you add specimens of the eggs of the birds as far as you can & your manner of stringing them in plate 13th of 2d Volume is agreeable to the eye of your readers. Where you omit the eggs a plate or two in the 6th or 10th volumes of them arranged judiciously and fancifully will suit the taste of many. Explanations of them may easily be made by figures to refer to. Instead of small parts of dry limbs of trees sometimes perhaps you could place the birds on living trees or shrubs or bushes, which would have a tendency of making the birds themselves look more lively & natural — or at least my fancy suggests this on comparing your plates already executed with one another. Where the male & female can be placed near each other it seems more pleasing at least to the courting or married pair. The manners of some birds may prevent their being placed on trees, but where they can be so placed they look more natural & by fixing the artificial birds on real limbs or shrubs, they can at length be placed so as to have the most pleasing effect to ones view.

"I live on an Island of 3000 acres of land at the eastern extremity of Long Island from which I am separated by Gardiner's Bay one league wide where I usually pass it. The common birds are not here interrupted by school boys & are plenty. Geese & Ducks of all kinds abound in my ponds and if you would take an excursion this way, shall be very happy to accommodate you in my house here & it is not impossible but you may find here or on the shores of Long Island some kind of waterfowl that are nondescripts. I am not sufficiently acquainted with birds to mention any that have not been described. My friend Dr. Samuel Latham Mitchell of Queens County on Long Island

is one of the greatest naturalists we have & I presume would be happy to give you any information he has. He informs me he has the pleasure of being acquainted with you.

"If ten volumes will not well contain our American Birds I hope you will add volumes enough to contain the whole. It is a work in which our national character is interested & I am anxious it should be a work of as much celebrity as any European publication.

"If you should acknowledge the receipt of this you will direct to me on this Island — Suffolk County, State of N. York.

"With much respect & esteem I am your friend

"JOHN L. GARDINER.

"FACTS AS TO THE FISH HAWK ON GARDINER'S ISLAND.

"1. They are regular in arriving on the 21 March & in leaving the place on 21 Sepr. heavy equinoctial storms only prevent a day or so.

"2. They repair their nests a few days before they leave them & being on high dry topped trees, they frequently have their nests blown away entirely during winter.

"3. They lay generally three eggs — hatch about 1 July.

"4. Are very fierce & bold while they have eggs or young & have been known to fix their claws in a negro's head, that was attempting to get to the nest — but was obliged to desist from the attempt on account of the flow of blood from the wound. Blackbirds build their nests in the side of the nests of the Fish Hawks.

"5. As soon as they arrive they wage war on the Eagle & by numbers & perseverance drive him off. The Eagle in darting on the Hawk obliges him to quit his fish — which before it reaches the ground the Eagle seizes.

"6. Sometimes on fixing their claws in too large a fish — are taken under water before they can clear themselves.

"7. When the Fish Hawks are seen high in the air sailing around in circles it is a sign of a change in the weather very soon — generally of a thunder storm in two or three hours.

"8. Are never known to eat anything but fish — commonly eat the head first. Are frequently seen cutting strange gambols in

the air — with part of a fish in their claws with loud vociferations darting down perhaps 100 yards. They seem proud of their prey.

"9. Seldom take one from the ground when dropped.

"10. Are so voracious that I presume when they have young they devour in 300 nests — two or three fish a day of 2 or 3 lbs. each fish — 7 or 800 fish a day in July & August.

"11. They seem fond of the striped bass which they cross Gardiner's Bay & Long Island to the Atlantic for. Are not known to refuse any other fish than the one commonly called Toad fish of the ponds.

"12. Are seen frequently crossing Gardiner's Bay with a stick in their claws, but it is not known whether from an unsuccessful fishing voyage or for the want of such particular stick for their nests.

"Facts communicated by John L. Gardiner."

NOTES ON THE BIRDS OF THE WACISSA AND AUCILLA RIVER REGIONS OF FLORIDA.

BY ARTHUR T. WAYNE.

FEBRUARY 9, 1894, I commenced to make observations on the avifauna of the Wacissa River and adjacent country. I selected the village of Waukeenah, in Jefferson County, as a base to work from, which is ten miles south of Monticello, the County seat, and about six miles from the head waters of the Wacissa River.

The country around Waukeenah is high and rolling, and the line of demarcation is so closely drawn, that upon leaving the hill country you pass immediately into the flat woods of the Wacissa. Within a mile of the flat woods the hills are so high that you can see over the forests of the Wacissa, as well as see the smoke from the famous Florida 'volcano,' which must be in Jefferson County, near the line of Wakulla County.

The country around Waukeenah is one vast clearing, which is all under cultivation. The Wacissa River presents a different

appearance, as there are no clearings whatever, but simply a wilderness. The length of the Wacissa is about twelve miles. It is very broad for four miles, when it becomes narrower — caused by a chain of islands, which extend some five miles parallel with the river. After the islands cease the river runs through large tracts of saw grass and rushes, and here there is no channel whatever. This spot is known as 'Hell's Half-Acre.' About a mile lower down, the river runs all over the entire country, being one large expanse of water with innumerable little streams which run in every conceivable direction. This particular place is called the 'Western Sloughs.' The Wacissa empties into a canal which is five miles long, which was dug before the war with the view of deepening the river and making it navigable. This object, however, was never realized, as the river is very shallow being, on an average, three feet deep. The canal above described joins the Aucilla River and conveys the water into the Aucilla River, and thence into the Gulf of Mexico.

The Wacissa is simply made up of myriads of springs, which are all perfectly clear, as is also the river. The bed of the river is rock from which grows a species of water grass, which being always more or less covered by water, is green throughout the year. The forest of the Wacissa, on the east side, is well nigh impenetrable. This is not due wholly to the dense undergrowth, but to the nature of the soil, which is exceedingly boggy, and, to use the words of the residents, the ground would 'bog a saddle blanket'!

The west side of the river is little better. While there is some high hammock land it is of small area and consequently harbors very few birds. Bird collecting is very laborious and unprofitable, as the country is simply a wilderness to prospect through.

The timber along the river is not very heavy, and the cypresses all appear to be stunted. The case is entirely different on the 'Canal Hammock,' near the Aucilla River, which is very heavily timbered with cypress, water oak, live oak — immense trees — black gum, sweet gum, magnolia, palmetto, etc.

The Wacissa is a 'snail river'; millions can be seen on the bottom. In May the snails commence to lay their eggs, which they deposit on any available object out of the water, and so

thickly are they stuck on the cypress trees and grasses, that the base of the trees resemble one mass of pink beads.

They have two enemies to contend with, however, in the Everglade Kite (*Rostrhamus sociabilis*) and the Limpkin (*Aramus giganteus*), as they destroy thousands of these snails.

The following is a list of birds observed between February 9 and June 15, in the region above described, and about as far as twelve miles from the Gulf, on the Aucilla River. A star indicates that the species breeds.

1. Podilymbus podiceps.*
2. Urinator imber.
3. Anhinga anhinga.*
4. Phalacrocorax dilophus floridanus.*
5. Anas boschas.
6. Anas obscura.
7. Anas americana.
8. Anas carolinensis.
9. Anas discors.
10. Dafila acuta.
11. Aix sponsa.*
12. Aythya affinis.
13. Guara alba.*
14. Tantalus loculator.*
15. Botaurus lentiginosus.
16. Ardetta exilis.*
17. Ardea wardi.*
18. Ardea egretta.*
19. Ardea candidissima.*
20. Ardea cœrulea.*
21. Ardea virescens.*
22. Nycticorax nycticorax nævius.*
23. Nycticorax violaceus.*
24. Grus mexicana.*
25. Aramus giganteus.*
26. Rallus elegans.*
27. Porzana carolina.
28. Ionornis martinica.*
29. Gallinula galeata.*
30. Fulica americana.
31. Philohela minor.
32. Gallinago delicata.
33. Totanus solitarius.
34. Bartramia longicauda.
35. Actitis macularia.
36. Ægialitis vocifera.
37. Colinus virginianus floridanus.*
38. Meleagris gallopavo.*
39. Zenaidura macroura.*
40. Columbigallina passerina terrestris.*
41. Cathartes aura.*
42. Catharista atrata.*
43. Elanoides forficatus.*
44. Ictinia mississippiensis.*
45. Rostrhamus sociabilis.
46. Circus hudsonius.
47. Accipiter velox.
48. Accipiter cooperi.*
49. Buteo borealis.*
50. Buteo lineatus.*
51. Buteo latissimus.*
52. Haliæetus leucocephalus.*
53. Falco peregrinus anatum.
54. Falco sparverius.*
55. Pandion haliaëtus carolinensis.*
56. Strix pratincola.*
57. Syrnium nebulosum alleni.*
58. Megascops asio floridanus.*
59. Bubo virginianus.*
60. Coccyzus americanus.*
61. Ceryle alcyon.
62. Campephilus principalis.*
63. Dryobates villosus audubonii.*
64. Dryobates pubescens.*

65. Dryobates borealis.*
66. Sphyrapicus varius.
67. Ceophlœus pileatus.*
68. Melanerpes erythrocephalus.*
69. Melanerpes carolinus.*
70. Colaptes auratus.*
71. Antrostomus carolinensis.*
72. Chordeiles virginianus chapmani.*
73. Chætura pelagica.*
74. Trochilus colubris.*
75. Tyrannus tyrannus.*
76. Myiarchus crinitus.*
77. Sayornis phœbe.
78. Contopus virens.*
79. Empidonax acadicus.*
80. Cyanocitta cristata florincola.*
81. Corvus americanus (floridanus ?).*
82. Corvus ossifragus.*
83. Dolichonyx oryzivorus.
84. Molothrus ater.
85. Agelaius phœniceus.*
86. Sturnella magna.*
87. Icterus spurius.*
88. Scolecophagus carolinus.
89. Quiscalus quiscula aglæus.*
90. Spinus tristis.
91. Poocætes gramineus.
92. Ammodramus sandwichensis savanna.
93. Ammodramus savannarum passerinus.
94. Ammodramus henslowii.
95. Ammodramus leconteii.
96. Zonotrichia albicollis.
97. Spizella socialis.
98. Spizella pusilla.*
99. Peucæa æstivalis.*
100. Peucæa æstivalis bachmanii.
101. Melospiza fasciata.
102. Melospiza georgiana.
103. Passerella iliaca.
104. Pipilo erythrophthalmus.
105. Pipilo erythrophthalmus alleni.*
106. Cardinalis cardinalis.*
107. Guiraca cærulea.*
108. Passerina cyanea.
109. Piranga rubra.*
110. Progne subis.*
111. Chelidon erythrogaster.
112. Tachycineta bicolor.
113. Clivicola riparia.
114. Stelgidopteryx serripennis.
115. Ampelis cedrorum.
116. Lanius ludovicianus.*
117. Vireo olivaceus.*
118. Vireo flavifrons.*
119. Vireo solitarius.
120. Vireo noveboracensis.*
121. Mniotilta varia.
122. Protonotaria citrea.*
123. Helinaia swainsonii.*
124. Helminthophila bachmani.
125. Helminthophila celata.
126. Compsothlypis americana.*
127. Dendroica æstiva.
128. Dendroica coronata.
129. Dendroica striata.
130. Dendroica dominica.*
131. Dendroica virens.
132. Dendroica vigorsii.*
133. Dendroica palmarum.
134. Dendroica palmarum hypochrysea.
135. Dendroica discolor.
136. Seiurus aurocapillus.
137. Seiurus noveboracensis.
138. Geothlypis trichas.*
139. Sylvania mitrata.*
140. Setophaga ruticilla.
141. Anthus pensilvanicus.
142. Mimus polyglottos.*
143. Galeoscoptes carolinensis.*
144. Harporhynchus rufus.*
145. Thryothorus ludovicianus.*
146. Thryothorus bewickii.
147. Troglodytes aëdon.
148. Troglodytes hiemalis.
149. Cistothorus stellaris.
150. Certhia familiaris americana.

151. Sitta carolinensis atkinsi.*
152. Sitta pusilla.*
153. Parus bicolor.*
154. Parus carolinensis.*
155. Regulus satrapa.
156. Regulus calendula.
157. Polioptila cærulea.*
158. Turdus mustelinus.*
159. Turdus aonalaschkæ pallasii.
160. Merula migratoria.
161. Sialia sialis.*

The following remarks upon certain species in the foregoing list will conclude this paper.

Aramus giganteus. LIMPKIN.—A common resident, which is locally known as the 'Nigger Boy,' from its cry. I secured six sets of eggs. They nest in saw grass and vines, also small bushes. The highest number of eggs found was seven. This record extends its range considerably.

Rostrhamus sociabilis. EVERGLADE KITE.— It was with much pleasure that I found the 'Snail Hawk' to be exceedingly common. The fishermen on the river told me of a curious hawk which they called the 'Snail Hawk,' when I arrived in February, but added that they had not seen one for a great many years. In the hope of seeing this strange bird, which I supposed must be the Everglade Kite, I prolonged my stay seven weeks. On May 9, an adult female was brought to me. The next day in less than ten minutes I shot four specimens within a mile from the head of the river. I secured about twenty examples and they were all in worn plumage, and also in moult, which makes me believe that the birds do not breed in this region, although Major Bendire, under date of June 23, writes me: "There must be a colony of them breeding within forty or fifty miles of the Wacissa River."

The birds are very tame and unsuspicious. They go in flocks of four to six and are very friendly with each other. Their food consists entirely of a large species of snail, which is to be had in myriads. They obtain the snails by flying over the water — exactly like a Gull — and by seizing them with one foot. They at once alight upon any convenient tree, bush, or drift, and by the bill alone pull the snail from the shell without the slightest injury to the shell whatever. Under their particular feeding spots the shells are piled up until they are from eight to twelve inches high. By dissection, in every case, the female was *brown*, while the male was *slate*. The iris is blood-red — a little blurred. The above record extends the range of this Kite about two hundred miles north, and to within eighteen miles of the Georgia line.

Buteo borealis. RED-TAILED HAWK.— Breeds abundantly in the hill country near Waukeenah, but not observed breeding on the Wacissa.

Buteo latissimus. BROAD-WINGED HAWK.— One of the commonest Hawks found breeding in the hill country and on the Wacissa.

Campephilus principalis. IVORY-BILLED WOODPECKER.— This magnificent bird was once very common in this region — a country especially adapted to its wants — where it was in a large measure secure, but it is

now rapidly becoming extinct on the Wacissa. Every one is shot by being systematically followed up. They are shot for food, and the people — the crackers — consider them "better than ducks"! The bill is also prized and many fall victims for that reason.

Helinaia swainsonii. SWAINSON'S WARBLER.— Breeds very abundantly on the Wacissa, but only sparingly in the hill country. The only nest found, which contained three very heavily spotted eggs, was taken May 7, in the hill country.

Helminthophila bachmani. BACHMAN'S WARBLER.— An extremely rare migrant in this region. I secured but eight specimens, of which five were females. All the males taken were shot while singing, which made me suspect they would breed in the hill country, as all the specimens I took on the Suwannee River, with one exception, were silent.

The mystery is where does Bachman's Warbler breed, for it must breed in some of the Southern States.

Thryothorus bewickii. BEWICK'S WREN.— A common winter and early spring resident. This is one of the commonest Wrens, being found along fenced roads. It sings like a Song Sparrow.

NOTE ON THE PAROQUET (*Conurus carolinensis*).— Formerly very common, but it has entirely disappeared from this region now. Mr. E. G. Kilpatrick, of Waukeenah, told me that he saw a flock of these birds alight in the trees in his yard four years ago, but they soon left.

In conclusion I wish to express my thanks to Mr. Edward G. Kilpatrick of Waukeenah, who assisted me in every possible way in securing specimens, and accompanied me through the Wacissa Wilderness.

DESCRIPTIONS OF THREE NEW BIRDS FROM THE ISLAND OF MARGARITA, VENEZUELA.

BY CHARLES W. RICHMOND.

DURING July of the present year Lieut. Wirt Robinson, U. S. A., visited the Island of Margarita on a short collecting trip, and obtained about two hundred specimens, representing all the land birds observed there, except *Polyborus* and the two common Vultures. These specimens were sent to the National Museum for identification, and in a preliminary examination of part of the collection the species here described appear to be new. They

are of course nearly related to birds of the mainland of Venezuela, which is distant from the island only about twenty miles. A detailed account of the birds of Margarita may be expected from Lieut. Robinson in the near future.

Amazilia aliciæ, new species.

Type, No. 151,067, U. S. N. M., ♂ adult, Margarita Island, July, 1895; Wirt Robinson; collector's No. 408.— Forehead, forepart of crown, lores, ear-coverts, cheeks, sides of neck, and under parts brilliant metallic green; nape, under wing-coverts, and axillaries less metallic green, and of a brassy hue; hind crown, wing-coverts (except primary coverts, which have hardly a shade of metallic color), and back metallic reddish bronze, most intense on the latter, and almost disappearing on rump; upper tail-coverts pale chestnut, some of the feathers centred with purplish blue, which is visible only upon disturbing the feathers; under tail-coverts uniform pale chestnut, without any metallic centres to the feathers, and without admixture of whitish feathers; thighs and crissum silky white; flanks with a tuft of downy white feathers, which are normally concealed; wings blackish, with slight bluish reflections; tail blue black; upper mandible black, lower mandible flesh color except at tip, where black. Wing, 2.07; tail (outer feather), 1.27; depth of fork, .18; culmen, .80 inches.

♀ adult, No. 151,068, U. S. N. M., Margarita Island, July, 1895; same collector (No. 483).— Similar to the male, but duller; fore crown and forehead much less brilliant, and not sharply separated from the bronzy shade of hind crown; abdomen mostly dull dusky gray. Wing, 2.04; outer tail feather, 1.24; depth of fork, .16; culmen, .81 inches.

Lieut. Robinson brought back eight specimens of this pretty bird, which is named in honor of Mrs. Robinson. It is closely allied to *Amazilia feliciæ* of the adjacent mainland but is evidently distinct. I have been unable at this time to compare the new species with males of *feliciæ*, but, fortunately, Lieut. Robinson stopped long enough at La Guayra to collect six females of the latter, which are of exceptional interest here, as they were collected at about the same time as those of the new form and are therefore in exactly the same state of plumage. Comparing females then, the new form differ from *feliciæ* in having the posterior part of the crown and back reddish bronze instead of green; in having the rump and upper tail-coverts practically without metallic color; the tail less brilliant, and steel black

instead of blue black; under tail-coverts uniform pale chestnut, without any metallic green or steel blue feathers; the bird is also larger than *A. feliciæ*. In the series of six females of the latter the under tail-coverts are mixed chestnut and metallic green or steel blue, with some occasional grayish feathers; the upper parts are brassy green in four of the specimens, in another there is a wash of bronze on the edges of the feathers of the back, while in the sixth the back and hind crown are quite as bronzy as in *A. aliciæ*, but this color extends down on the rump and upper tail-coverts more than in the latter species. The bronzy color on this last specimen of *A. feliciæ* seems to be due to a stain, or rather to a mechanical change in the structure of the 'metallic' feathers. It is well known that hummers when shot frequently become soiled through the exudate from shot holes in the throat, and the nectar or exudate drying upon the feathers, even in a very diluted state, probably changes the color of the feathers with which it comes in contact. The metallic green crest of a *Pharomacrus* will turn a deep reddish bronze when moistened with water, and the original color is restored upon drying. It is some such accident, I think, which accounts for the bronzy specimen of *A. feliciæ* mentioned above.

The series of *A. aliciæ* has been compared with *A. erythronota* and *A. tobaci*, in addition to *A. feliciæ*, and it is clearly more nearly related to the latter.

The sexes are easily separable in this species, and from its close affinity to the other three forms just mentioned, the same is doubtless the case with them. The glittering green cap of the male, sharply defined from the less brilliant remainder of the crown, is sufficient to separate the sexes without recourse to the other characters mentioned in the description.

Doleromya pallida, new species.

Type, No. 151,069, ♂ adult, Margarita Island, July, 1895; Wirt Robinson; collector's No. 432.— Similar to *D. fallax*, but much paler below, where pale buffy fulvous; metallic green of upper parts less brilliant and less brassy; size the same. Upper mandible and tip of lower, black; lower mandible flesh color. Wing, 2.41; tail (central feathers), 1.40; exposed culmen, .82 inches.

♀ adult, No. 151,070, U. S. N. M., Margarita Island, July, 1895, same collector (No. 409).— Does not differ from the male. Wing, 2.28; tail (central feathers), 1.34; exposed culmen, .85 inches.

Lieut. Robinson collected nineteen specimens of this species, which I have compared with three specimens of *D. fallax* belonging to the American Museum of Natural History and kindly forwarded to me by Dr. J. A. Allen. They are uniformly paler than the three examples of *D. fallax*, and all, without exception, have pale flesh colored lower mandibles, while those of *fallax* are apparently yellow when fresh, at any rate the American Museum specimens have the appearance of having had yellow lower mandibles in life. There does not appear to be any appreciable variation in the amount of white on the outer tail-feathers in *D. pallida*, and the area occupied by white on these feathers is the same in both species.

In both forms the feathers of the under parts are edged with buff, the less exposed part of the feathers being different shades of fulvous (light in *pallida*, and darker in *fallax*), consequently the more worn the plumage, the darker the birds appear. The majority of specimens of *D. pallida* are in somewhat worn plumage, while the three specimens of *D. fallax* are in quite fresh condition, hence the differences between the two species pointed out above will probably be greater when the two birds are compared in the same condition of plumage.

Cardinalis robinsoni, new species.

Type, No. 151,072, U. S. N. M., ♂ adult, Margarita Island, July, 1895; Wirt Robinson; collector's No. 460.— Similar to *C. phœniceus* but smaller, with considerably shorter crest. Apparently no difference in color. Wing, 3.26; tail, 3.29; tarsus, .96; culmen, .76; length of crest, 1.17 inches.

The female, of which two specimens are in the collection, differs in the same manner.

All of the five specimens obtained on Margarita are in worn plumage and somewhat bleached. The single female of *C. phœniceus* at hand is in fresh plumage, and the under parts are deep ochraceous buff, with the middle of the abdomen buff; the two specimens of *C. robinsoni* are pale creamy buff below, slightly

darker ochraceous on flanks and sides of body; this difference of color is due partly, at least, to the worn condition of plumage of the latter.

One of the females of *C. robinsoni* differs from the other, and from the female of *C. phœniceus*, in having the scarlet vermilion of the crest, under part of wing and tail replaced by ochraceous yellow; otherwise it is the same.

The measurements of our pair of *C. phœniceus* (from Lake Maracaibo) are: ♂, wing, 3.45; tail, 3.60; tarsus, .94; culmen, .73; length of crest, 1.63 inches. ♀, wing, 3.33; tail, 3.53; tarsus, .97; culmen, .71; length of crest, 1.43 inches.

The specimens of *C. robinsoni* measure: ♂, wing, 3.26; tail, 3.29; tarsus, .96; culmen, .76; length of crest, 1.17 inches. ♂, wing. 3.20; tail, 3.20; tarsus, .95; culmen, .69; crest, 1.13 inches. ♂, wing, 3.20; tail, 3.10; tarsus, .95; culmen, .70; crest, 1.18 inches. ♀, wing, 3.13; tail, 3.06; tarsus, .91; culmen, .69; crest, 1.11 inches. ♀, wing, 3.20; tail, 3.13; tarsus, .99; culmen, .73; crest, 1.25 inches.

DESCRIPTIONS OF TWO NEW SUBSPECIES OF CALIFORNIA BIRDS.

BY F. STEPHENS.

Callipepla gambeli deserticola, subspec. nov. DESERT PARTRIDGE.

Subspecific characters.—Similar to *C. gambeli* but lighter in color; back olive gray inclining toward ash gray; sides chestnut, sharply striped with white; belly dull white; flanks and lower tail-coverts lightly streaked with brown; occiput russet in the male, drab in the female. Types, No. 4969, ♀ ad., 15 January, 1890, Palm Springs, San Diego Co. (now in Riverside Co.), Cal., alt. 100 ft.; and No. 4938, ♀ ad., 1 January, 1890, Walters, Colorado Desert, Cal., 250 feet below sea level. Both in my collection.

Habitat.—Desert District, from the western end of the Colorado Desert and the middle of the Mojave Desert east through the Colorado Valley.

The Desert Partridge differs from the Gambel's Partridge much as the Valley Partridge does from the California Partridge, and from the same cause, the drier habitat.

Speotyto cunicularia obscura, subspec. nov. DUSKY BURROWING OWL.

Subspecific characters.— Smaller than *S. c. hypogæa;* facial disk sepia, mixed with grayish; top of head sepia, streaked with dull brownish white; entire plumage slightly tinged with rusty. Length (of type), 8.65 inches (220 mm.); extent, 21.65 (550); wing, 6.20 (158); tail, 3.10 (79); tarsus, 1.65 (42). Type, No. 151,022, U. S. National Museum (original No. 5874), ♀ ad., 29 May, 1894, Upper Lake, Lake Co., Cal., alt. 1400 ft., F. Stephens, Col.

Habitat.— The valleys of the Pacific Coast District north of San Francisco Bay, perhaps excepting the lower valleys tributary to the Bay.

From the nature of the region Burrowing Owls are scarce all through it. The type is the only one I remember seeing. It is very dark about the head, especially about the face, which at first glance seems to be dirty, as if blood stained. The style of coloration is what might be expected in this region, being in the same direction as in *Bubo v. saturatus*, *Callipepla californica* and *Colaptes c. saturatior*.

RECENT LITERATURE.

Sharpe and Wyatt's Monograph of the Swallows.[1]—This excellent and most welcome monograph, begun in 1885, has recently been completed (the last parts bear date October, 1894), having been nine years in publication. It forms two quarto volumes, comprising 755 pages of text with 129 plates, of which 26 are maps showing the distribution of the various genera and species, the remaining 103 giving colored representations of the birds themselves.

The total number of species recognized is 109, distributed in 12 genera, and two subfamilies — Hirundininæ, including 10 genera, and Psalidoprocninæ, consisting of the two genera *Psalidoprocne* and *Stelgidopteryx*. Why the last-named genus should be thus separated from the genera placed in the Hirundininæ is certainly not obvious, and no satisfactory reasons are offered in the Monograph.

Respecting the affinities and status of Swallows as a group, and particularly in their relation to Swifts, we may quote the following (p. xi): "When the 'rostral' system became somewhat exploded, they [the Swallows] were ruthlessly separated from their former companions [the Fissirostres], until now, in due course of re-action, they seem to be recognized as Passerine Birds of a somewhat Cypseline tendency, or perhaps, one might more truly say, the Swifts are Cypseline Birds with a Hirundinine tendency. For the nine years in which this book has been in publication, we entertained the hope that some competent anatomist would enact such a comparison of the characters of the two Families that we should have been able to summarize the results, and tell our readers exactly how the Swallows may be differentiated from the Swifts in every point of structure. In default of this much-needed exhaustive essay from our expert brethren, we venture to define the characters of the Hirundinidæ as follows:—

"A. Passerine Birds with nine primary quills.

"B. Spinal feather-tract bifurcated.

"C. A single moult in the year, executed, so far as we know from the migratory species, during their residence in the winter home.

"No Passerine Birds, we believe, present this triple combination of characters, but further information is, of course, desirable."

The conclusion reached is that Swallows are "Passerine Birds *without any very close allies.*"

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[1] A Monograph | of the | Hirundinidæ | or | Family of Swallows. | By R. Bowdler Sharpe, LL.D., F. L. S., F. Z. S., Etc., | . . . . [= 6 lines of additional titles] | and | Claude W. Wyatt, | Member of the British Ornithologists' Union. | — | Volume I [–II] | — | London: | Henry Sotheran & Co., | 37 Piccadilly, W. | 140 Strand, W. C. | 1885–1894. 2 Vols., 4to, Vol. I, pp. i–lxx + 1–356, pll. i–liv; Vol. II, pp. i–viii + 357–673, pll. lv–cxxix.

The subject of 'Geographical Distribution' occupies fifteen pages of the 'Introduction,' from which it appears that 5 genera are peculiar to the Old World, while 4 are peculiar to the New World. The geographic areas recognized are essentially those of Dr. Sharpe's paper 'On the Zoo-Geographical Areas of the World, illustrating the Distribution of Birds,' published in 1893 (Nat. Sci., III, pp. 100–108, — *cf.* Auk, XI, 1894, pp. 63–65). A 'Note on the Supposed Hibernation of Swallows' occupies pp. lxix, lxx of the 'Introduction,' from which we quote: "We will add, however, that we shall require further evidence of the hibernation of Swallows on the next occasion that a torpid specimen is produced from the mud or such-like place in winter. We shall want to see the moulted feathers of the bird in its place of retreat; for this little fact seems to have been unknown to the believers in the phenomenon, *that Swallows moult during the winter months.* Very few birds, we fancy, could support immersion in water, torpidity, and a complete moult of body-feathers, quills, and tail-feathers at the same time; and, for our own part, we do not believe in the hibernation of Swallows (we say nothing about 'Swifts,' which are Swallows still to the uninstructed), but prefer to think of them as wintering in a warmer climate than England, where insect food is procurable, and where they have a chance of surviving the trying process of their moult."

It seems strange to find so little on record in regard to the moult of Swallows. Judging from museum specimens — unfortunately *not* generally taken at the season when birds in general are in moult — there are some exceptions to the above-given rule, as I find an unquestionably adult male *Stelgidopteryx serripennis* (Am. Mus. No. 53251), taken at Fort Verde, Arizona, Sept. 20, 1886, by Dr. Mearns, symmetrically moulting the quills in both wings, and also the clothing plumage. The authors of the Monograph also cite Mr. Brewster's remarks on the moult of the young of the White-bellied Swallow (p. 158) which imply that the adults also moult before going south. Indeed, the authors of the Monograph say in the same connection: "In the Henshaw collection, however, are specimens which are commencing to moult on the 14th and the 27th of August, and an old female killed in the same month and at the same place (Sing-Sing, N. Y.) has almost completely donned its winter plumage, including the white-tipped secondaries; the longest primaries have not yet been shed."

That the adults as well as the young of both *Tachycineta bicolor* and *T. thalassina* undergo a complete moult of both clothing and flight feathers in the latter part of August and early part of September is abundantly shown by specimens of the former taken in northern New Jersey, and of the latter taken in Arizona and California, all of the adults in the collection taken at this season being in the midst of a general moult. Unfortunately there are no adult specimens of other North American species, taken at this season of the year, at hand at this writing for examination; but we should be much surprised if it turned

out that our other North American species, particularly the Barn and Cliff Swallows, should not also undergo a general moult about the end of August.

The principal literature of the family of Swallows is passed in review (pp. xxi-lxvii), the early French and English authors justly coming in for detailed notice; hence it seems all the more incongruous to find no notice of Linnæus earlier than 1766 (12th ed. Syst. Nat.)!

The plates, drawn by Mr. Wyatt and printed by Minturn Brothers, are well done. The text is very full and satisfactory, the biographies and the geographic distribution of the species, when known, being treated at length, a special and unusual feature being the numerous colored maps showing the ranges of the species. The North American species, owing perhaps to the fact that their habits and distribution are, as a rule, better known than those of most other species, are treated at unusual length, 11 pages being devoted to the Rough-winged Swallow, 20 to the Sand Martin, 22 to the White-bellied Swallow, and 24 each to the Cliff Swallow and the Barn Swallow. Great pains has been taken to work out the distribution of some of the species, as for example the White-bellied Swallow, the colored map (Pl. 35) showing, as nearly as could be ascertained, both its breeding and migratory ranges.

In regard to points of nomenclature we should not always be willing to subscribe to the practice here followed, as where *Progne purpurea* (Linn., 1766) is preferred to *P. subis* (Linn., 1758), and where *Petrochelidon swainsoni* Scl. (1858) is adopted in preference to *P. melanogaster* (Swain., 1827), because the latter does not chance to be 'appropriate.' But where there is so much that is worthy of commendation, it becomes ungracious to criticise what is not wholly to our taste.—J. A. A.

Ornithology in the Standard Dictionary.[1]—The specialist determines the advance made in a knowledge of his chosen subject by reviewing the literature relating to it, but to learn what part of this has become

[1] A | Standard Dictionary | of the | English Language | Upon Original Plans | Designed to Give, in Complete and Accurate Statement, in the Light of the Most | Recent Advances in Knowledge, and in the Readiest Form for Popular Use, | the Orthography, Pronunciation, Meaning, and Etymology of all the Words and the Meaning of Idiomatic Phrases in the Speech and Literature of the English- | Speaking Peoples | Prepared by | More than Two Hundred Specialists and Other Scholars | Under the Supervision of | Isaac K. Funk, D. D., Editor-in-Chief | Francis A. March, LL. D., L. H. D., Consulting Editor Daniel S. Gregory, D. D., Managing Editor | Associate Editors: | John Denison Champlin, M. A. Rossiter Johnson, Ph. D., LL. D. | Arthur E. Bostwick, Ph. D. | Complete in One Volume | New York | Funk & Wagnalls Company | London and Toronto | 1895 | Printed in the United States. Roy. 4to. pp. xx, 2318, numerous cuts in the text and both colored and uncolored full-page plates.

common knowledge by being rendered available to the reading world at large, he must turn to works of reference. The Century Dictionary was not comparable with anything that preceded it, but in the Standard Dictionary we have a volume which may fairly be contrasted with Webster, our previously generally accepted authority.

Making our comparison from a purely ornithological standpoint we turn at once to the noun "bird" with the following results: Webster gives simply the literal and accepted meaning of the word followed by a comment on its use in place of the more correct term "fowl." The Standard Dictionary gives both definitions with two additional unimportant ones and supplements these by a figure showing the topography of the external parts, of which forty-seven are designated, and a full-page plate illustrating twenty-two species in color. Further comparison confirms this surprising difference in treatment of ornithological terms. Especially is this true in the case of more technical words as for example: Caligula, dromæognathus, schizopelmous, schizognathus, zygodactylous, etc., all of which are illustrated. On the other hand we find the special ornithological meaning of such common words as "penciled" or "speckled" explained by cuts of a penciled feather and speckled egg. Zoögeography, a term unknown to Webster, is illustrated by a map giving the faunal provinces of the world. We regret, however, to see that the divisions of Sclater and Wallace are given rather than the more recent systems, which have been largely accepted by later students of this subject. Genera are, as a rule, omitted, but orders, suborders, families and subfamilies of birds are included with brief but satisfactory definitions, as for example: Anatidæ, "A family of natatorial birds with the edges of the bill lamellate or toothed, generally including ducks, geese, swans, and mergansers." Oscines, "a subclass of passerines, especially those with several pairs of muscles attached to the upper bronchial semi-rings, forming an apparatus for singing; including thrushes, sparrows, etc."

Species are given only under English names and the adjectival form of the family is frequently made to do duty as a definition. Thus the Albatross, Cormorant, and Flamingo are defined respectively as diomedeoid, phalacrocoracoid, and phœnicopteroid birds. Aside from this rather objectionable method the matter under species is clear and full, descriptions of plumage and structure, range, popular synonyms and occasionally characteristic habits being given.

The work is lavishly illustrated, birds receiving their full share of the cuts, our American species being particularly well cared for in this respect. Thus, taking a letter at random, we find twenty-three species figured under S. These figures are evidently largely adapted from various sources and while often antiquated are for the greater part helpful.

The special nature of this review prevents us from calling attention to the numberless admirable features of this magnificent work, but we

console ourselves with the thought that its low price renders it accessible to every one. It is a remarkable literary achievement; fully worthy of the time in which it appears.— F. M. C.

Dwight on the Ipswich Sparrow.[1] — Dr. Dwight's memoir doubtless constitutes the most complete biography which has ever been published of any North American bird. Beginning with its discovery by Mr. Maynard at Ipswich, Mass., in 1868, scarcely a fact in the recorded history of this coast-loving Sparrow is omitted, while the author's experience with it in its summer home enables him to present a monograph admirable for its completeness. From 1868 to 1885 the pages of our text-books, ornithological and natural history journals, show an increasing number of records of the occurrence of this species in late fall and winter on our coasts from New Brunswick to Delaware. The fact of its regular presence in numbers was then definitely established and, in the oft-quoted words of Mr. Dutcher, it was "relegated to the commonplace." In 1890 it was recorded by Dr. Rives from Virginia and by Mr. Worthington from Georgia, but until 1894 its summer home was a matter of speculation. Strong evidence was furnished, it is true, that the bird bred on Sable Island. It remained for Dr. Dwight, however, to finally settle the question by visiting the island from May 28 to June 14, 1894.

As a result of his visit he gives us chapters on the 'History of Sable Island,' 'Physical Aspect of Sable Island,' 'Climate,' 'Flora,' 'Mammals,' 'Birds,' and an extended bibliography.

Sable Island is twenty miles long with a maximum width of one mile. It is described as of probably glacial origin and consists of rolling sand-hills sometimes eighty feet in height resembling in almost every particular, save greater size, the stretches of sand dunes to be found along our Atlantic seaboard. In the hollows among the hills, however, "grasses grow luxuriantly in many places, and a large part is carpeted with the evergreen Crowberry (*Empetrum nigrum* L.) and Juniper (*Juniperus nana* Willd.) which are very characteristic productions."

Distant eighty-six miles from Nova Scotia, Sable Island is farther from the mainland than any continental island off the coast of eastern North America. Its fauna is, therefore, of peculiar interest. No indigenous mammals were found. Many species of both water and land birds occur as transients, but only ten species were nesting at the time of Dr. Dwight's visit. These he gives in the relative order of their abundance as follows: *Sterna paradisæa*, *Sterna hirundo*, *Ægialitis semipalmata*, *Ammodramus princeps*, *Tringa minutilla*, *Ægialitis meloda circumcincta*, *Sterna dougalli*, *Merganser serrator*, *Anas obscura*, and *Actitis macularia*.

[1] Memoirs of the Nuttall Ornithological Club. No. II. The Ipswich Sparrow (Ammodramus princeps Maynard) and its Summer Home. By Jonathan Dwight, Jr., M. D., with a colored plate. Cambridge, Mass. Published by the Club. August, 1895. 4to. pp. 56; Pl. I. $1.50.

Three pages are devoted to the nine water birds included in this list among which are several species (*e. g.*, *Sterna dougalli*, *Tringa minutilla*, *Ægialitis semipalmata*, and *Æ. meloda circumcincta*) whose presence as breeders was not to be expected, and the succeeding twenty-two pages (pp. 20–42) are given to the biography of the Ipswich Sparrow, the only breeding land bird. Its synonymy, variations in plumage, size, distribution and migration, habits, song, nest and eggs, and food are here treated in detail. Six nests and five sets of eggs, three of four and two of five eggs, are described, showing that in its nidification the bird closely resembles its near ally the Savanna Sparrow.

The Ipswich Sparrow is a permanent resident on Sable Island, occurring in reduced numbers during the winter, and the most important part of Dr. Dwight's paper is his conclusion that Sable Island constitutes the bird's entire breeding range, and that it is there "a good example of an island species, probably related at one time to the Savanna Sparrow of the mainland by ties that cannot now be traced." The Ipswich Sparrow may thus claim the distinction of being the only bird of northeastern North America which illustrates the effects of isolation in an insular home.

Dr. Dwight's memoir is characterized by such thoroughness of research, both in the field and study, as to be practically above criticism. We may, however, add to the synonomy the following records which appear to have been overlooked: *Passerculus princeps* Roosevelt, 'Notes on some Birds of Oyster Bay, Long Island,' 8vo. leaflet, published by the author, March, 1879; Editor, Forest & Stream, XIV, 1880, p. 6 (notice of a paper read before the Linnæan Society by C. H. Eagle, "reviewing our present knowledge of the pallid sparrow (*Passerculus princeps*) and mentioning the capture of two specimens at Rockaway, L. I., January, 1880)."

'Birdcraft' is included in the bibliography on the basis of "Unimportant mention in a popular work," when, in fact, it gives the breeding ground of the Ipswich Sparrow as "Sable Island, Nova Scotia" and describes its song, nest, and eggs!— F. M. C.

Loomis on California Water Birds.[1] — In pursuing his studies of the migration of birds, Mr. Loomis passed the morning of each day in a small boat at from one-third of a mile to ten miles off shore. He justly claims that the phenomena of migration may be more readily observed over the sea than on the land. Aside from other and more obvious reasons, he remarks that "migration over the ocean continues during the daytime to an extent not usually observed on land, resembling, perhaps, more the night migration of land birds." Thus while the birds which pass a given station might not be noted on shore, they do not escape the observer who can maintain a fairly thorough watch over an area enclosed by a circle six

[1] California Water Birds. No. 1. — Monterey and Vicinity from the middle of June to the end of August. By Leverett M. Loomis. Proc. Cal. Acad. Sci., Ser. 2, V, pp. 177–224, 1 map, June, 1895.

or eight miles in diameter. To the incomplete and misleading records of migration on land Mr. Loomis attributes what he considers to be the false statement that young birds migrate in advance of the adults. His own experience, as given in both this and other papers, would seemingly prove that in this country the contrary was true, and he says: "The *mere* occurrence of the young in a given locality before the presence of adults has been detected proves nothing beyond the bare fact that the young were observed there earlier than the adults. It does not prove that they left the region of their birth in advance of their parents, any more than the habitual absence in a locality of a species breeding to the northward and wintering to the southward of it, proves that the species does not migrate." Mr. Loomis thus agrees with most American students of migration on this much discussed question of leadership, but on the other hand we have Herr Gätke asserting positively from Heligoland: "1. That under normal conditions in the case of the three hundred and ninety-six species occurring here, with the exception of a single one, the autumn migration is initiated by the young birds, from about six to eight weeks after leaving their nests. 2. That the parents of these young individuals do not follow till one or two months later. . . ."

Beginning on June 16, Mr. Loomis gives a daily record of the movements of birds down the coast, showing the influence of general and local climatic conditions on the numbers of birds and direction of flight. This is followed by a summary and an annotated list of the forty-four species of which specimens were taken. *Brachyramphus hypoleucus* and *Stercorarius longicaudus* are here recorded for the first time from California. Mr. Loomis has selected a comparatively little known field in which to prosecute his studies, and we trust that this valuable and suggestive paper may be followed by many others from his pen. — F. M. C.

Ridgway's Ornithology of Illinois.[1] — An extended review of the first volume of this work[2] sufficiently explains its object and character. The present volume is devoted to the game and water birds, and concludes the 'Descriptive Catalogue.' Some 139 species are included, which, added to the 216 given in the first volume, make the total for the State 355. The occurrence of the following species, however, lacks confirmation: *Lagopus lagopus*, *Ardea rufescens*, *Megalestris skua*, *Stercorarius pomarinus*, *Larus argentatus*, *Xema sabinii*, *Sterna maxima*, and *Urinator arcticus*. Mr. Ridgway's faith in *Ardea wuerdmannii* of the A. O. U.

[1] Natural History Survey of Illinois, | State Laboratory of Natural History, | S. A. Forbes, Director. | The | Ornithology | of Illinois | — | Part I, Descriptive Catalogue, | By Robert Ridgway. | Volume II. | Part 1. | — | Published by authority of the State Legislature. | — | Springfield, Ill. | H. W. Rokker, Printer and Binder. | 1895. Roy. 8vo. pp. 282; pll. xxii.

[2] Auk, VII, Jan. 1890, pp. 74–77.

'Hypothetical List' is shown by his inclusion of this bird on the basis of an individual "seen on several occasions," by himself near Mt. Carmel. Subtracting these, reduces the total to the neighborhood of 350, a number which, curiously enough, seems to represent the avifauna of those States whose birds have been most thoroughly studied, without regard to their inland or seaboard position.

Ornithologists are to be congratulated on the completion of this work. When Part II (in which we have no doubt Professor Forbes will treat the subject economically as thoroughly as Mr. Ridgway has systematically) appears the inhabitants of Illinois may justly claim to be more enlightened ornithologically than the residents of any other State in the Union. — F. M. C.

The Food Habits of Woodpeckers.— Bulletin No. 7[1] of the Division of Ornithology and Mammalogy, U. S. Department of Agriculture, is devoted to the food habits of North American Woodpeckers. It consists of two papers, the first and principal one being by Prof. F. E. L. Beal, on the 'Food of Woodpeckers' (pp. 7–33), and the other (pp. 35–39 and pll. i–iii) by Mr. F. A. Lucas on the 'Tongues of Woodpeckers,' in their relation to the character of the food.

"The present paper," says Mr. Beal, "is merely a preliminary report, based on the examination of 679 stomachs of Woodpeckers, and representing only 7 species — all from the eastern United States. These species are the Downy Woodpecker (*Dryobates pubescens*), the Hairy Woodpecker (*D. villosus*), the Flicker or Golden-winged Woodpecker (*Colaptes auratus*), the Red-headed Woodpecker (*Melanerpes erythrocephalus*), the Red-bellied Woodpecker (*Melanerpes carolinus*), the Yellow-bellied Woodpecker (*Sphyrapicus varius*), and the Great Pileated Woodpecker (*Ceophlœus pileatus*). Examination of their stomachs shows that the percentage of animal food (consisting almost entirely of insects) is greatest in the Downy, and grades down through the Hairy, Flicker, Pileated, Redhead, and Yellow-bellied to the Red-bellied, which takes the smallest quantity of insects."

The Downy Woodpecker is considered to be the most beneficial, and the Hairy Woodpecker and the Flicker the next so, these three species being considered as among the least harmful of our common birds. The Yellow-bellied Woodpecker is the only species of the seven possessing really harmful qualities, which may, in certain localities, render it detrimental to fruit trees, through its fondness for sap and the inner

[1] Preliminary Report on the Food of Woodpeckers. By F. E. L. Beal, Assistant Ornithologist.— The Tongues of Woodpeckers. By F. A. Lucas, Curator, Department Comparative Anatomy, U. S. National Museum.= Bulletin No. 7, U. S. Department of Agriculture, Division of Ornithology and Mammalogy. Washington: Government Printing Office, 1895. 8vo, pp. 1–44, pll. i–iii, Frontispiece, and 4 cuts in the text.

bark of trees. Tabulated statements are given of the percentages of different kinds of food found in the stomachs of the species examined, and excellent uncolored illustrations are given of five of the seven species treated.

Mr. Lucas describes and figures the tongue as found in 11 species, representing all the genera of North American Woodpeckers, and reaches the conclusion that the evidence thus gathered "favors the view that modifications of the tongue are directly related to the character of the food and are not of value for classification." Granting that the facts are as stated, we are reluctant to agree with Mr. Lucas's conclusion, for on the same grounds we should have to rule out of the list of taxonomic characters any structural feature adaptatively modified to special modes of life; and these involve, in a more or less marked degree, every part of the organism. It would be very surprising if the form of the tongue should not vary markedly in accordance with the nature of the food and the manner of obtaining it. Mr. Lucas's descriptions and figures of Woodpeckers' tongues is a welcome and valuable contribution to the subject treated, which is, furthermore, one of great interest.—J. A. A.

Barrows and Schwarz on the Food of the Common Crow.[1]— This extended report on the food of the Crow (*Corvus americanus*), based on the examination of about 1,000 stomachs, from Crows killed throughout the year and over a very wide extent of country, shows with some degree of accuracy and detail the real nature of the food of this much maligned and commonly outlawed bird. Everybody has long known that Crows pull the farmer's sprouting corn, and will pilfer a little fruit, and destroy the eggs and young of poultry and wild birds. The good they do has not been so evident, although they have been generally credited with feeding to some extent on cutworms, grasshoppers, field-mice and reptiles. The present Bulletin shows statistically and in detail the proportionate amount of the animal and vegetable food consumed by the Crow and the principal elements of which it consists. The verdict on the whole is decidedly favorable to the Crow, his worst trait being his decided predilection for the eggs and young of our native birds. Of 616 Crows killed during April, May, June, and July, 50 had in their stomachs when killed the remains of wild birds or of their eggs. As many of these 50 Crows were nestlings, Professor Barrows concludes "that not more than 1 Crow in 20 ever becomes addicted to this sort of stealing"—a generalization for which we fail to see adequate basis in the data presented. We should rather say that not more than 1 Crow in 20 habitually partakes of the

[1] Bulletin No. 6 | U. S. Department of Agriculture | Division of Ornithology and Mammalogy | The Common Crow | of the | United States | — | By Walter B. Barrows and E. A. Schwarz | [Seal] | Washington | Government Printing Office | 1895. 8vo., pp. 96.

young or eggs of wild birds, during the four months named, as a part of its daily diet. For we do not believe, from what we have seen of Crows in life, that 86 per cent of the race are too virtuous to indulge in such dainties when the opportunity is available. Professor Barrows says: "The actual quantity of bird remains found in the stomachs is comparatively small. In very few cases did it form as much as half of the entire stomach contents, though in one or two stomachs it exceeded that proportion. The average for the 50 stomachs was about 18½ per cent; or only 1½ per cent for the 616 stomachs taken during the season. The average annual amount in the 909 stomachs was almost exactly 1 per cent." This is certainly a very considerate way of putting the case — for the Crow, since such food is available for only about one third of the year. But suppose that, as here assumed, only 1½ per cent of the food of millions of voracious Crows for four months of each year consists of the eggs and young of wild birds, who can calculate the immense destruction of bird life here admitted?

The Bulletin consists of four chapters, as follows: I. 'General Habits of the Crow,' under which is treated its geographic distribution, migration, and Crow roosts, the latter occupying about 16 pages, and giving a list of the principal known Crow roosts. II. 'Animal food of the Crow' (pp. 26–56), considered under various subheadings. III. 'Insect food of the Crow' (pp. 56–72). This includes a special report (pp. 57–68) on the character of the insect food found in Crows' stomachs by Mr. E. A. Schwarz, of the Division of Entomology, who renders the following verdict: "The facts on the whole overwhelmingly speak in favor of the Crow, and taken alone would be at variance with the prevalent opinion hitherto held and yet held regarding the economic status of the Crow as an insectivorous bird." IV. 'Vegetable food of the Crow' (pp. 72–85). Although other grains than corn are eaten by the Crow, and although fruits are eaten to a small extent, the only real damage done to crops is occasioned by the persistent habit of Crows everywhere of pulling the newly planted corn to get at the swollen kernel, which they devour with avidity. The damage thus caused is sometimes serious, but is easily guarded against, as shown in Chapter IV, 'Protection of Crops' (pp. 88–94), as by 'tarring' the corn before planting it, to render it distasteful, and by using various devices for frightening the Crows away. Another safeguard we have often known practiced with success is to scatter small quantities of corn about the field, which the Crows and other corn-loving birds will eat in preference to pulling up the growing sprouts.

Under the head of migration, Professor Barrows states that the fact that "Crows are regularly migratory has been generally overlooked, chiefly because in most localities in the United States where Crows breed they are represented in winter by at least a few individuals. . . . The great center of Crow population in the eastern part of this winter zone [lat. 35°–40°] is in the neighborhood of Chesapeake Bay and its

tributaries; a more western center is found near the junction of the Ohio and Mississippi Rivers, while large numbers winter farther west, along the Arkansas and lower Missouri." As Mr. Barrows implies, their winter distribution is largely governed by the food supply; an unharvested field of corn, as far north as Massachusetts, we have observed, is sure to become the winter feeding grounds for hundreds of Crows, however deep the snow or severe the weather.

The Bulletin as a whole is a most painstaking and laborious investigation, and goes far to settle satisfactorily the economic status of a bird unrelentingly persecuted for crimes that are to a large extent imaginary, or at least grossly magnified.—J. A. A.

Forbush on 'Birds as Protectors of Orchards.' — Another valuable contribution to economic ornithology is Mr. E. H. Forbush's paper on 'Birds as Protectors of Orchards,' recently published in the 'Bulletin of the Massachusetts Board of Agriculture.'[1] The paper relates largely to the destruction of the eggs of the canker-worm moth by winter birds, notably the Chickadee (*Parus atricapillus*), which also feeds in fall on the wingless females of the same destructive insect. An account is given of an attempt to protect an old and neglected orchard from insect ravages by getting winter birds to make it their haunt by suspending in it pieces of meat, bone, suet, etc. The experiment shows not only that birds can thus be attracted in numbers to a particular area, but that they prove wonderfully destructive to insect pests infesting fruit trees. Kinglets were found to have eaten largely of bark borers, while Woodpeckers appeared to confine themselves to the larvæ of borers, wood-ants, and other insects which bore into the wood of the tree. Notes are given on the beneficial work of summer birds in destroying caterpillars and other destructive insects infesting orchards. Winter birds are also shown to be great destroyers of the eggs of the canker-worm moth, and of scale insects. "No birds," it is said, "were seen to eat the eggs of the tent caterpillar, nor were any found in the stomach of any of the birds examined. It seems probable that these eggs are so protected by a hard covering that they are not eaten by most birds." While this may be true, the Blue Jay is evidently an exception, as we have found by examination of the stomachs of birds of this species taken in orchards in winter.[2] Mr. For-

[1] Massachusetts Crop Report for the month of July, 1895. Issued by Wm. R. Sessions, Secretary State Board of Agriculture. Series of 1895, Bulletin No. 3. Boston, 1895, 8vo, 32 pp. Birds as Protectors of Orchards, by E. H. Forbush, Ornithologist to the Board, pp. 20–32.

[2] *Cf.* Proc. Essex Inst., IV, 1864, p. 75. Also an article by the late Dr. T. M. Brewer on 'The Blue-Jay Family,' published in the Atlantic Monthly, April, 1870, p. 482, in which is given a detailed account of the usefulness of the Blue Jay in destroying the larvæ of the tent-caterpillar, on the authority of Dr. J. P. Kirtland.

bush's observations afford most conclusive proof of the protective influence of birds against orchard pests, and we trust the facts he here presents may be made widely known. — J. A. A.

Merriam on the Geographical Distribution of Animals and Plants in North America.— This paper[1] of 12 pages is "a review of the work undertaken and of the results accomplished by the Division of Ornithology and Mammalogy." Reference is made to the economic value of a knowledge of the geographic distribution of species; the results of an experimental survey of the San Francisco Mountain region in Arizona are recounted, and of the subsequent biological survey of South-Central Idaho, the Death Valley region, Wyoming, Montana, the tablelands of Mexico, and elsewhere. The life zones of North America are recapitulated and illustrated with a map, and the "fundamental principles of animal and plant distribution" are succinctly stated, followed by a recapitulation of the work thus far accomplished respecting the general subject of geographic distribution. The paper is in the main a popular résumé of the author's previous reports and papers on the same subject, already noticed at length in previous numbers of this journal. — J. A. A.

Suchetet on Hybridity in Birds.[2] — Part 5, closing Mr. Suchetet's volume on hybridity among birds in a state of nature, is devoted to additions and corrections to the preceding parts, published respectively in 1890, 1891, 1892, and 1893. The present volume is largely made up of additional cases of alleged hybridity, either recently reported, or from earlier reports recently discovered by the author. As we have said in an earlier notice of this work (Auk, IX, 1892, pp. 382, 383), Mr. Suchetet has done good service by industriously bringing together in systematic order the substance of the extended and much scattered literature relating to this interesting subject, rather, however, as an amateur than as a trained investigator well equipped for his task. It is, however, a work of immense research, and will prove a valuable compendium of the subject. The work unfortunately is apparently without an index, or even a table of contents. He proposes to devote his second volume on hybridity to the classes of insects and fishes. — J. A. A.

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[1] The Geographic Distribution of Animals and Plants in North America, by C. Hart Merriam, Chief of the Division of Ornithology and Mammalogy, U. S. Department of Agriculture. Reprinted from the Year-book of the U. S. Department of Agriculture for 1894, pp. 203–214. Washington, 1895.

[2] Les Oiseaux Hybrides | rencontrés a l'état sauvage | Par | André Suchetet | — | Cinquième Partie | Additions and Corrections | — | Lille | Imprimerie typographique et lithographique le Bigot Fréres | 68, rue Nationale, et 25, Nicolas-Leblanc. | — | 1895. 8vo, pp. 473–873.

Chapman's 'Handbook of Birds of Eastern North America,' Second Edition.[1]— It is interesting to note that a second edition of Chapman's 'Handbook of the Birds of Eastern North America' was quickly called for, showing not only that a good work is appreciated, but also evincing the strong popular interest in the study of our birds. The second edition is from the same electrotype plates as the first, from which it differs merely in the correction of a few typographical errors and the addition of an appendix of six pages giving a 'field-key' to about 100 of the more common species, based on their coloration, characteristic habits, notes, and haunts, with a view to their ready identification in the field.— J. A. A.

Stone on the Name Calliste.[2] — Mr. Stone finds that the generic name *Calliste* Boie, 1826, is preoccupied by *Callista* Poli, 1791, and that *Aglaia* Swains., 1827, the next name applied to the birds of this genus, had been previously used for both mollusks and hydrozoans. It appears, therefore that *Calospiza* G. R. Gray, 1840, is the earliest available name for this group of Tanagers. — F. M. C.

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[1] For a review of the work and a full transcript of the title see *antea*, pp. 282–284.

[2] The Priority of the names *Calliste*, *Aglaia*, and *Calospiza* and their use in Ornithology. By Witmer Stone. Proc. Acad. Nat. Sci. Phila., 1895, pp. 251, 252.

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GENERAL NOTES.

Brünnich's Murre in Michigan. — On the morning of December 13, 1894, a Brünnich's Murre (*Uria lomvia*), in dying condition, was picked up on the Flat River, a small stream near the city of Greenville, Michigan. It came into the hands of Mr. Percy Selous, a naturalist and taxidermist of that place, who subsequently sent it to me for inspection, and eventually presented the specimen, well mounted, to the State Agricultural College. Mr. Selous writes me that the bird, an immature male, was greatly emaciated, and was dead, though not really cold when he obtained it, probably not more than an hour or two after its capture. This, I believe, is the first actual record of the occurrence of this species in Michigan, and is of special interest as rendering more probable the several more or less reliable reports of capture of other members of the family within the State. — WALTER B. BARROWS, *Agricultural College, Mich.*

Oceanodroma socorroensis off San Diego, Calif. — During April and May of the current year a number of Socorro Petrels were seen off San Diego, and a small series was secured by the writer, thus adding the species to the avifauna of the United States. The species has heretofore been known only from the unique type taken at Socorro Island by Chas. H. Townsend. — A. W. ANTHONY, *San Diego, Cali.*

Nesting of the Red-breasted Merganser on Saddleback Ledge, Maine. — On June 21, 1894, I made a visit to Saddleback Ledge, a small, grassy island situated about six miles from Isle au Haut, for the purpose of col-

lecting a few sets of eggs of the Common Tern. While walking around the island, I flushed a female Red-breasted Merganser (*Merganser serrator*) from her nest, which contained ten eggs, and was composed of a quantity of dry grass very warmly lined with down and feathers. It was situated on the ground under a clump of umbelliferous plants (*Heracleum lanatum* Michx.), which grow very commonly on the islands of Penobscot Bay. The eggs are of a peculiar drab color and measure 2.65 × 1.76, 2.66 × 1.72, 2.49 × 1.70, 2.60 × 1.76, 2.50 × 1.76, 2.60 × 1.77, 2.54 × 1.74, 2.60 × 1.80, 2.68 × 1.75, and 2.60 × 1.76. — ORA W. KNIGHT, *Bangor, Maine.*

Breeding of Somateria dresseri near Isle au Haut, Maine. — On June 26, 1895, I found three nests with eggs of the American Eider on Spirit Ledge, a small island about five miles from Isle au Haut, Maine. The nests were placed on the ground in the midst of a clump of umbelliferous plants, which were growing near the center of the island, and contained two fresh eggs, and incubated sets of three and six eggs respectively. The two latter nests were found by flushing the females. Later in the day I found a fourth nest, containing four eggs, on Saddleback Ledge, about three miles distant from Spirit Ledge. This last nest was on the ground in plain sight, but the eggs were hidden by a thick covering of down. Incubation was advanced about four days. The eggs are a greenish drab color and measure 3.05 × 2.10, 3.17 × 2.05, 3.06 × 2.05, and 3.16 × 2.05 inches.

The captain of the boat which conveyed me to the islands informed me that the fishermen considered the eggs a great delicacy, and collected them for cooking purposes. He also informed me that the 'Sea Ducks,' as he called them, used to nest in much greater numbers near Isle au Haut, but that the constant persecutions of the fishermen had lately caused the birds to nest on the ledges in greatly reduced numbers. — ORA W. KNIGHT, *Bangor, Maine.*

The Scaled Partridge (*Callipepla squamata*) **in Colorado.** — In 'The Auk' for July (XII, p. 298), Mr. Willoughby P. Lowe records the capture of a Scaled Partridge in the Wet Mountains, in south-central Colorado. His is undoubtedly the first record for the State and extends the range of the species about one hundred and fifty miles north of its recorded range in New Mexico. In the winter of 1892–93 I was shown a freshly killed bird of this species by a Denver taxidermist who told me that it was shot on the Platte River, a short distance east of the city. I could get no further information, and as the location was so far from the known habitat of the species I concluded that it was an escaped bird or had been introduced on some of the ranches along the river and so did not publish the record. I am still of the opinion that the species does not normally wander so far north, but I cannot learn of any Scaled Partridges being introduced into that State.— A. W. ANTHONY, *San Diego, Calif.*

The Passenger Pigeon in the Upper Mississippi Valley. — While collecting with Mr. Wallace Craig, Sept. 3, 1891, I shot a male Wild Pigeon (*Ectopistes migratorius*) in an oak grove in Chicago, near 75th Street, between Stony Island Avenue and Lake Michigan. It was feeding and flew up at our approach, alighting perhaps ten feet from the ground, where I shot it. It was not at all wild, and was a bird of the year. We saw two others in the same grove, but did not secure them.

April 8, 1894, Mr. Edw. J. Gekler saw a flock of about fifteen Wild Pigeons flying while in a woods near Liverpool, Indiana.

Mr. Kaempher, a taxidermist of this city, had a fine male Passenger Pigeon mounted on one of his shelves which was brought in on March 14, 1894. The gentleman who brought it said he shot it near Liverpool, Indiana, and saw quite a number of them at the time.

Mr. W. C. Stryker, of Berrien County, Mich., now a student in the Chicago College of Dental Surgery, told me that on May 27, 1894, he found a flock of perhaps twenty Wild Pigeons in a clover field on his farm near some burr oaks into which they flew when he frightened them. They remained on his place for some time and were not molested. His farm is but three or four miles from the Indiana line. He is very familiar with the Passenger Pigeon, having shot many several years ago when they were abundant. — JAMES O. DUNN, *Chicago, Ill.*

A Large Brood of Ospreys. — A pair of Ospreys (*Pandion haliaëtus carolinensis*) that build on one of the pole nests in Bristol, R. I. (see 'Auk,' Vol. XII, No. 3, p. 300), raised last spring (1895) a brood of seven young. On the 11th of June two of the nestlings, about the size of squabs, were picked up dead under the nest and on the twenty-sixth of the same month another young bird was also found dead at the foot of the pole. In the latter part of July the nest contained four almost fully fledged young. This is the largest brood of Ospreys I have ever heard of being raised in a season, and from all appearances the seven eggs must have been laid in seven or eight days. — REGINALD HEBER HOWE, JR., *Brookline, Mass.*

On the Correct Subspecific Names of the Texan and Mexican Screech Owls. — A recent careful examination of the subject has convinced me that, as Messrs. Sclater and Salvin have several times insisted, *Scops trichopsis* of Wagler is the bird afterward described by Cassin as *Scops mccallii* and subsequently by Lawrence as *S. enano*, and not the form from Arizona and parts of northern and central Mexico, to which the name has recently been applied by American ornithologists. Kaup's detailed description in the Transactions of the Zoölogical Society of London, Vol. IV, 1862, pp. 227–228. taken from Wagler's type, I think settles this question beyond a doubt. *Scops mccallii* CASSIN is therefore a synonym of *S. trichopsis* WAGLER, and No. 373 *b*. of the A. O. U. Check-List becomes MEGASCOPS ASIO TRICHOPSIS (WAGLER). No. 373*f*, not being Wagler's bird, must

have another name; and since I have been unable to find one already provided I propose to name it MEGASCOPS ASIO CINERACEUS, from its ashy coloring. This is the "*Megascops asio trichopsis*" of my Manual of North American Birds (p. 261), and also the [*Scops asio*] Subsp. β *Scops trichopsis* of SHARPE, Cat. B. Brit. Mus. II, 1875, 119.— ROBERT RIDGWAY, *Smithsonian Institution, Washington, D. C.*

The St. Lucas Flycatcher in California.— During the latter part of June, 1895, a few days were spent in collecting in the pine growth on Cuymaca Peak, San Diego County. Between the altitudes of 4000 feet and 6000 feet several *Empidonax cineritius* were taken and they were found to be rather common and the only species of the genus met with at that altitude. A few *E. pusillus* were found nesting at the base of the peak at an altitude of 3700 feet. In July *pusillus* was found along the base of San Jacinto Peak, Riverside County, and *E. hammondi* was taken as high as 9500 feet, where it was nesting. It is possible that *E. cineritius* may occur between the ranges of *pusillus* and *hammondi* on San Jacinto, as Flycatchers were seen that resembled that species but no specimens were secured.

The recorded range of the St. Lucas Flycatcher is hereby extended north of the Mexican boundary and the species added to the avifauna of California.— A. W. ANTHONY, *San Diego, Cal.*

Skylarks Nesting on Long Island.— At Flatbush, Long Island, July 28, 1895, after I had for a couple of hours been listening to the strains of the Skylark (*Alauda arvensis*) as they were poured from the sky, a resident of the neighborhood kindly guided me to the spot, in a field near by, where, about two weeks previously, he had found a Skylark's nest. The nest contained when he found it, he said, three half-fledged young ones and one egg. When the nest was pointed out to me the egg was still there, but the fledglings had departed.

The land on which we were standing was grassy and slightly 'rolling,' and the nest was situated about midway on the descent of one of the rolls. In the spring preceding, while the ground was soft, a horse and cart had been driven but once across the field, making a deep track, and in one of the horse's foot-prints, about three inches deep, the nest was made. To form and complete the nest, the bird had rounded away the angles of the foot-print and scantily lined it with dried rootlets and coarse grass.— THOMAS PROCTOR, *Brooklyn, N. Y.*

The American Crossbill.— The American Crossbill is usually quite common in this vicinity during the winter months, and a few birds remain until quite late in the spring. A flock of about thirty remained on the Maine State College campus from March 4 to June 19, 1895, and at any time they could be found feeding in the pine trees with which the college campus is covered. Birds shot from this flock at intervals showed

no indications of breeding upon dissection. June 19, the flock of Crossbills suddenly disappeared.

While at Jackman, Maine, from August 16–23, 1895, I found American Crossbills to be very common in that vicinity. They were usually in small flocks of five to seven individuals and were very evidently parents and young of the year. A number of times I observed the parents in the act of feeding the young.

What is very odd is the fact that I observed a number of the birds flying about in pairs. These were probably still nesting. Some of the Crossbills probably nest much later than is generally supposed.— ORA W. KNIGHT, *Bangor, Maine.*

Junco phæonotus Wagler, not J. cinereus (Swainson).— *Fringilla cinerea* SWAINSON, 1827 (= *Junco cinereus* AUCTORUM) being preoccupied by *Fringilla cinerea* GMELIN, 1788 (= *Melospiza cinerea* AUCTORUM), it becomes necessary to change the names of the Mexican Junco and its subspecies, as follows: —

Junco phæonotus WAGLER (Isis, 1831, 526).

Junco phæonotus palliatus RIDGWAY (A. O. U. No. 570).

Junco phæonotus dorsalis (HENRY) (A. O. U. No. 570 *a*).— ROBERT RIDGWAY, *Smithsonian Institution, Washington, D. C.*

Henslow's Sparrow in Indiana.— In July, 1894, while camping with Mr. Wallace Craig, we found this small Sparrow was common in a field of weeds near the southeast corner of Bass Lake in Starke County, Indiana. Two were secured, both males, which were singing while perched on the tallest weed tops. July 24, 1895, while camping on the Kankakee River, near Wilders, Indiana, we found this Sparrow was abundant in an extensive field of tall weeds. Mr. Craig shot at one and it fell wounded in the weeds where it was very hard to find for it tried to keep hidden in the grass. The weed on which he had been standing was one of the tallest in the neighborhood, although not over three feet high, and it had evidently been used by the bird a great deal, judging from the amount of excrement on the grass below it.

The Yellow-winged Sparrow was found in the same locality and was more numerous than the Henslow's, and, when perched on weedtops or fence posts, was tamer. They could easily be distinguished from the Henslow's by their notes. The following is from our notebook written by Mr. Craig while we were camping at Wilders: "Henslow's Sparrows seem to be quite numerous and found over a considerable area in the prairies. They sing frequently and may be heard in almost, if not quite, the hottest part of the day. The song is very simple, being a very rude attempt at producing music. It consists, so far as I have been able to determine, of two insect-like notes; it may be represented by the syllables *stitch lick*, uttered in quick succession, and once, when I had fired several shots without hitting anything, I thought the birds

said 'such luck,' 'such luck.' The notes, as has been said, are insect-like in character, especially the first one, which is very lisping, the last note having more volume. The notes are not loud, but may be heard at some distance, and are somewhat ventriloquistic, seeming to come from some general direction but not from any definite spot so that it is impossible to locate the birds easily by their notes.'

While camping at Bass Lake in 1894, we heard one of these birds at 11 P. M., the night being clear and moonlight.—JAMES O. DUNN, *Chicago, Ill.*

The Rough-winged Swallow (*Stelgidopteryx serripennis*) breeding in North Adams, Berkshire Co., Mass.— Several years ago I noticed a pair of birds that resembled Bank Swallows flying about a limestone cliff in North Adams. The nature of the place led me to suspect these birds were Rough-winged Swallows, but I was unable to pursue the subject further that summer. This year, on the 28th of June, I found two Swallows skimming over the surface of a small sheet of water near the above-mentioned cliff and quickly satisfied myself, with the aid of opera-glasses, that they were Rough-wings. It soon appeared that they were engaged in feeding their young, which were enscounced within a narrow, inacessible crevice near the summit of the neighboring cliff, about fifty feet from its base. The old birds would pass entirely out of sight within the crevice; the young were invisible. But on the morning of July 2, when I again visited the place, four or five young birds nearly ready to fly were sitting in a row at the mouth of the crevice, while their parents, resting from their labors, basked in the warm morning sun or otherwise disported themselves after the fashion of their tribe. I shot the male, July 2; the young left the nest, July 3.

The Rough-winged Swallow has never before been known to breed in Massachusetts. Indeed, the only previous notice of its occurrence in the State relates to a single specimen killed in Easthampton by W. S. Clark in May, 1851, as recorded by H. L. Clark in 'The Birds of Amherst and Vicinity,' 1887, p. 49. A single specimen was captured in Suffield, Conn., June 6, 1874 (Bull. Nuttall Ornithol. Club, II, 1877, 21) and another in East Hartford, Conn., in June, 1885 (Bull. Amer. Mus. Nat. Hist., I, 1886, 267). It is known to breed in southwestern Connecticut near Bridgeport (B. N. O. C., IV, 1879, 119) and Stamford (Auk, XII, 1895, 86), near the eastern end of Long Island at Shelter Island (Auk, X, 1893, 369), and in the lower part of the Hudson River Valley as far north as West Point, N. Y. (B. N. O. C., III, 1876, 46). The North Adams locality is only about three miles from the southern boundary of Vermont.—WALTER FAXON, *Museum of Comparative Zoölogy, Cambridge, Mass.*

Turdus aliciæ bicknelli and Otocoris alpestris praticola as Summer Residents of Berkshire County, Mass.— In 1889 (Auk, VI, 106) I recorded the capture of Bicknell's Thrush on the summit of Mt. Graylock in early

July, 1888, under circumstances which led me to believe that the bird bred there. This year I passed the night of June 29–30 on the top of Graylock and was again greeted, both in the evening and in the morning, by the beautiful song of this Thrush,— the song so admirably characterized by Mr. John Burroughs in 'Riverby,' pp. 47, 49. A hasty search for the nest in the midst of a drenching rain on the morning of the 30th proved unavailing; but the anxiety manifested by the bird when I invaded his domain confirmed my belief that this Thrush breeds on Graylock.

On the 27th of last June I was delighted to find a little flock of six or seven Prairie Horned Larks — probably members of one family — feeding in a ploughed field in North Adams, near the edge of Williamstown. One of them was in full song. This is the place where Mr. J. B. Grimes had told me that this bird breeds (see 'Auk,' IX, 1892, 202). The discovery of the nest of the Prairie Horned Lark near Pittsfield, Mass., by Mr. C. H. Buckingham in 1892 was announced in 'The Auk,' XI, 1894, 326.— WALTER FAXON, *Museum of Comparative Zoölogy, Cambridge, Mass.*

Notes from Western New York. — Plegadis autumnalis.— A Glossy Ibis was shot at Dunkirk, N. Y., late in April, 1894, by Mr. John W. Ware of that place. Mr. Ware tells me that the bird was wading in shallow water at the time and that he had no difficulty in approaching within gunshot as it was not very shy. The specimen, which I have examined, is in the rich, purplish red plumage of the adult.

Strix pratincola. — A male Barn Owl was shot just outside the city limits at Pine Hill on July 18, 1895. I saw it at the taxidemist's a few days later.

Icteria virens. — On June 17, 1895, I secured a male Yellow-breasted Chat in a bushy pasture at West Seneca. I first saw the bird two days before, when I spent some time looking for its nest. Also looked for the nest on the above date, but found none. This was the only bird I started. It is the second record for Erie County. — JAMES SAVAGE, *Buffalo, N. Y.*

Notes on Some Birds of Northeastern Illinois. — Pectoral Sandpiper. — I was somewhat surprised when my friend, Mr. Wallace Craig, brought in a specimen of this species on July 26, 1893, and reported them as common at 'Mud Lake.' This small lake is in the southern part of the city near 83rd Street and Stony Island Avenue. Part of the north shore is free from rushes and very muddy, and seemed to be a favorite feeding ground for Sandpipers. We visited the lake the next day and found this species was abundant and very tame, alighting on the mud-flat within a few feet of us. August 2, we found them in great numbers, easily securing nine, which was as many as we cared for. They would alight on the flat beach while we were wading within twenty feet. August 9, they were not nearly so tame, for pothunters had begun to mow them down.

On June 18, 1894, Mr. Craig observed this species at 'Mud Lake,' and they came within twenty feet of him, while he lay hidden in the grass watching them.

June 18, 1895 Mr. Craig observed them at 'Mud Lake' in some numbers. May 24, 1895, Mr. Craig found a good sized flock of Pectoral Sandpipers at Havana, Ill., on the Illinois River.

Least Sandpiper. — Saw a loose flock of about twenty-five Least Sandpipers (*Tringa minutilla*) July 3, 1893, and secured three at 'Mud Lake.' I saw many on July 26, 1893, and on other collecting trips made to 'Mud Lake' during that summer.

Semipalmated Sandpiper. — Shot three on July 27, 1893, and saw many others at 'Mud Lake.' August 2, 1893, I saw a great many Semipalmated Sandpipers (*Ereunetes pusillus*) which were very tame alighting within twenty feet of us. June 9, 1894, I found a flock of about fifty birds of this species not far from 'Mud Lake' on a large, soft, muddy tract, which also had many single birds of this species scattered over it. My companion killed five at one shot. Nelson in 'Birds of Northeastern Illinois,' says those he has shot in the summer were barren birds, but this has not been the case with those I have skinned.

Semipalmated Plover. — On July 27, 1893, I fired into a flock of Sandpipers and killed a Pectoral Sandpiper and a Semipalmated Plover (*Ægialitis semipalmata*) at 'Mud Lake.' I saw three of this species on August 2, 1893, at 'Mud Lake,' which were very tame.

Broad-winged and Sharp-shinned Hawks. — While collecting with Mr. Wallace Craig in the southern part of Chicago (83rd Street and Stony Island Avenue) on April 27, 1892, we observed a flight of Hawks which lasted all day. At one time in an opening of a small woods, called Hog Island, Mr. Craig counted fourteen in sight. Most of them appeared to be medium-sized Hawks, perhaps one fourth of them being small sized ones. Mr. Craig shot one of the latter and found it was a Sharp-shinned Hawk (*Accipiter velox*). I shot two of the larger ones and found them to be a male and female Broad-winged Hawk (*Buteo latissimus*). The stomach of the female contained two garter snakes, one about eight and one half inches long, and five Coleoptera, while that of the male contained three spiders and two Orthoptera.

There may have been other species of Hawks in the flight, but the Broad-winged and Sharp-shinned were the only ones we were able to identify, and I am positive that nearly, if not quite all, were of these two species.

They were rather tame, several alighting among the trees, but we were unable to secure more as we had no shells loaded with coarse shot. The Hawks were all flying nearly south, or perhaps southwest, which we were unable to account for, as the woods was full of birds migrating northward. The day was warm and pleasant with light thunder showers in the morning. The wind was strong and from the south.

Turkey Vulture. — While collecting birds with Mr. Gekler on May 30, 1895, we saw a pair of Turkey Vultures (*Cathartes aura*) soaring, about two miles east of Riverdale, Ill., and within the limits of Chicago. Once they came within long gun range and Mr. Gekler fired at them without

success. A farmer informed us that a dead horse was not far off, which had attracted them. Mr. Nelson notes them as a rare visitant in northeastern Illinois.

Barn Owl.— Sept. 25, 1894, Mr. Edward J. Gekler of this city saw some small boys carrying a dead Owl along the street. He purchased it and kindly presented it to me for my collection. Mr. E. W. Nelson in 'Birds of Northeastern Illinois' says it is a very rare visitant and notes the capture of two.

American Magpie.— On the morning of Oct. 17, 1892, Mr. Wallace Craig observed a Magpie (*Pica pica hudsonica*) in a small grove not far from the World's Fair. It was rather shy and was followed from tree to tree by some Blue Jays and House Sparrows. It may have been an escaped cage-bird, although Kennicott mentions them as formerly occurring here.

Harris's Sparrow.— Oct. 6, 1894, I shot a Harris's Sparrow (*Zonotrichia querula*) about one half of a mile east of Riverdale, Ill., on the Illinois Central R. R. It was in a row of small willows with weeds growing in between, and seemed to be with a loose flock of White-crowned Sparrows. It was within the limits of Chicago, perhaps two hundred feet from the city line. I can find no record of its occurrence in northeastern Illinois.

Prothonotary Warbler.— As I was crossing the bridge over the Little Calumet River, May 25, 1895, at Riverdale, Ill., my attention was attracted to some House Sparrows (*Passer domesticus*) on some piles in the river which were perhaps fifteen feet off, as I had just seen a male Sparrow drive away a small bright-colored bird, which I recognized readily as a Prothonotary Warbler (*Protonotaria citrea*). It alighted on a nearby post hanging on the side, but soon flew back to the post from which it had been driven and disappeared in a cavity in the post. It appeared in a moment and was set upon by the Sparrow, but this time it turned and put him to flight, chasing him under the bridge where I lost track of them. Nelson in 'Birds of Northeastern Illinois' says it is a rare summer resident.

This species is one of the most abundant summer residents along the Kankakee River at Wilders, Indiana, about sixty-four miles from Chicago.— JAMES O. DUNN, *Chicago, Ill.*

CORRESPONDENCE.

A Relative of Alexander Wilson.

To the Editors of 'The Auk':—

Dear Sirs:—The only relatives of Alexander Wilson, the great American ornithologist, that ever emigrated from Scotland to the United States, to my knowledge, were the Duncans. Mrs. Duncan, who had lost her husband in Scotland, was a sister of Alexander Wilson, and William Duncan, her oldest son, accompanied Wilson across the ocean, while Mrs. Duncan and her next oldest son, Alexander Duncan, together with several smaller children, came on to this country a little later.

In one of Wilson's letters attached to his biography he says: "Two of the Purdies popped into my school as unexpected as they were welcome, with news from the Promised land." One of the "Purdies" was my father, and the other his brother. My father was a great friend of Wilson and the Duncans and more especially of Alexander Duncan, who was nearer his age. They were bare-footed boys together and their friendship remained unbroken until parted by death some time after reaching the ripe old age of four score years. I have known Alexander Duncan to walk ten miles on foot, after he was eighty years of age, to visit my father.

Alexander Duncan settled on a farm near South Lyon, Oakland County, Michigan, and had two sons, Robert and James, and several daughters, only two of whom are now living. One daughter lives at Ann Arbor, Mich., and James Duncan now occupies the old homestead near South Lyon, Mich. His father and mother are buried on the old farm, on a little patch of ground fenced off for that purpose, and there, under those little grassy mounds, lies all that is mortal of poor old Alexander Duncan and his wife.

James Duncan has been quite prosperous and has added to the old homestead until he now owns nearly eight hundred acres of good farming land, including a fine grove on the banks of Silver Lake. Here he has a tent, stove, and cooking utensils where he delights to entertain his friends on fishing excursions, picnics, etc. He is not much of an ornithologist, but loves his dogs and gun, and makes his annual trips to northern Michigan in pursuit of deer, his favorite game. In stature he is tall and erect, with piercing blue eyes, and light curly hair that hangs in ringlets nearly to his shoulders, and in movements, will, and determination, he seems greatly to resemble his noted relative Alexander Wilson.

Yours truly,

James B. Purdy.

Plymouth, Michigan.

NOTES AND NEWS.

THE THIRTEENTH ANNUAL CONGRESS of the American Ornithologists' Union will be held in Washington, beginning on the evening of Monday, November 11, 1895, which session will be devoted to the election of officers and members and the transaction of the usual routine business. Tuesday and the following days will be given to public sessions for the reading and discussion of scientific papers. Members intending to present papers are requested to forward the titles of their papers to the Secretary, Mr. John H. Sage, Portland, Conn., prior to November 6, in order to facilitate the preparation of the program of papers to be read before the Congress.

PROF. L. L. DYCHE, who accompanied the ill-fated 'Miranda' expedition of 1894 as naturalist, has passed the entire summer of 1895 on the Greenland coast. Professor Dyche sailed from Gloucester, Mass., in May on a fishing schooner which landed him at Holsteinburg, West Greenland. He was picked up here July 15 by the members of the Peary Relief Expedition, on board the S. S. 'Kite,' and with them proceeded to Peary's headquarters in Whale Sound. News has just been received of the safe return of the expedition to St. John's, Newfoundland, Professor Dyche having, it is reported, been very successful in gathering large collections of mammals and birds.

MR. R. A. BRAY, writing in 'Nature,' records a remarkable flight of birds observed by him through a telescope directed toward the sun, at 3 P. M., on September 30, 1894, at Shere, Guilford, England. Every few seconds a bird would pass slowly across the sun, and there was no decrease in their numbers during the ten minutes of observation. The birds were flying in a southerly direction and were invisible to the naked eye, but must have been at least two or three miles away, as both birds and sun were in focus. This is a phase of migration which seems to have previously escaped attention and suggests the probability of a more extended diurnal movement than we at present know of.

IT IS encouraging to note not alone the increase in quantity but the improvement in quality of the ornithological literature which appears in our magazines. 'Our Animal Friends,' the monthly journal of the New York Society for the Prevention of Cruelty to Animals, is especially advanced in this respect, each number containing one or more original articles on birds generally accompanied by illustrations.

AT a recent sale in London an egg of the Great Auk from the collection of the Comte de Baracé, said to have been taken in Iceland about 1830, brought 165 guineas.

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ERRATA.

Page 35 line 17, for May 19, read June 19.
" 53 " 1 " MEARN'S read MEARNS'S.
" 82 " 10 " **Eastern** read **Western**.
" 89 " 18 and 19, for FRANCIS H. ALLEN, *West Roxbury, Mass.*, read RALPH HOFFMANN, *Belmont, Mass.*
Page 203 line 21 for larger read large.
" 214 " 12 " **Zenaida** read **Zenaidura**.
" 291 " 7 and 22, for **furcata** read **furcatus**.
" 307 " 19 for boggy read bogie.
" 308 " 2 " swinging read singing.
" 358 " 8 from bottom, for **pigmæa** read **pygmæa**.

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